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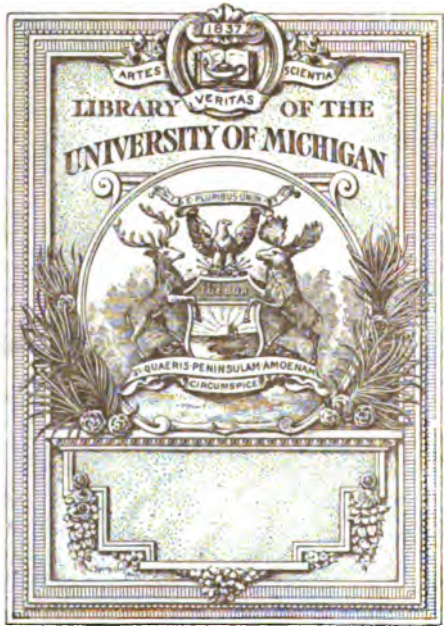
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UNIVERSITY OF NEVADA BULLETIN

VOL. II APRIL 1, 1908 No. 2

UNIV. OF NEVADA
JUN 22 1909

REGISTER

OF THE

UNIVERSITY OF NEVADA

For the Year April 1, 1907—April 1, 1908

WITH ANNOUNCEMENTS FOR THE YEAR
APRIL 1, 1908—APRIL 1, 1909

TWENTIETH ANNUAL NUMBER

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA

CARSON CITY, NEVADA:
STATE PRINTING OFFICE : J. G. MCCARTHY, SUPERINTENDENT
1908

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Entered in the Postoffice at Reno, Nevada, as second-class matter, under Act of Congress, July 16, 1894.

OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, April 1, 1908.

To His Excellency, JOHN SPARKS, *Governor of the State of Nevada.*

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1907–1908, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the Students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: OSCAR J. SMITH,
Chairman.

GEORGE H. TAYLOR, *Secretary.*

283979

UNIVERSITY CALENDAR.

1908 SECOND SEMESTER, 1907–1908.

January 25	Saturday	Examinations for admission.
January 27–28	Monday–Tuesday	Matriculation and registration of students.
January 29	Wednesday	Recitations and lectures begin.
February 2	Sunday	University convocation at 3 p. m. in Gymnasium.
February 22	Saturday	Washington's Birthday.
April 16–20	Thursday–Monday	Easter recess.
May 30	Saturday	Senior examinations end.
May 30	Saturday	Decoration Day.
June 6	Saturday	Examinations end.
June 6	Saturday	Annual meeting of the Honorary Board of Visitors.
June 7	Sunday	Baccalaureate Sunday.
June 8	Monday	Thesis Day.
June 9	Tuesday	Annual Meeting of the Board of Regents.
June 10	Wednesday	UNIVERSITY COMMENCEMENT.

SUMMER VACATION.

June 11	Thursday	Summer vacation begins.
September 3	Thursday	Summer vacation ends.

1908 FIRST SEMESTER, 1908–1909.

September 4–5	Friday–Saturday	Examinations for admission.
September 4–5	Friday–Saturday	Reëxaminations to remove conditions.
September 7–8	Monday–Tuesday	Matriculation and registration of students.
September 9	Wednesday	Recitations and lectures begin.
September 13	Sunday	University convocation at 3 p. m. in Gymnasium.
October 31	Saturday	Admission Day.
Nov. 26–29	Thursday–Sunday	Thanksgiving recess.
Dec. 18–Jan. 4	Friday–Monday	Holiday vacation.
1909		
January 5	Tuesday	Recitations and lectures begin.
January 29	Friday	End of first semester.

NOTE—All, except new students, who apply for registration on days other than those named in the Calendar, will be charged a fee of two dollars.

1909 SECOND SEMESTER, 1908–1909.

January 30	Saturday	Examinations for admission.
February 1–2	Monday–Tuesday	Matriculation and registration of students.
February 3	Wednesday	Recitations and lectures begin.
February 7	Sunday	University convocation at 3 p. m. in Gymnasium.
February 12	Friday	One Hundredth Anniversary of Lincoln's Birth.
February 22	Monday	Washington's Birthday.
April 8–12	Thursday–Monday	Easter recess.
May 29	Saturday	Senior examinations end.
May 30	Sunday	Decoration Day.
June 5	Saturday	Examinations end.
June 5	Saturday	Annual meeting of the Honorary Board of Visitors.
June 6	Sunday	Baccalaureate Sunday.
June 7	Monday	Thesis Day.
June 8	Tuesday	Annual Meeting of the Board of Regents.
June 9	Wednesday	UNIVERSITY COMMENCEMENT.

NOTE—All, except new students, who apply for registration on days other than those named in the Calendar, will be charged a fee of two dollars.

OFFICERS OF ADMINISTRATION.

THE REGENTS OF THE UNIVERSITY.

The Hon. OSCAR J. SMITH (1905–1909) Chairman Reno
The Hon. CHARLES B. HENDERSON (1907–1911) Elko
The Hon. JOHN SUNDERLAND, JR. (1907–1911) Reno
The Hon. CHARLES R. LEWERS (1907–1909) Reno
The Hon. J. E. SOUCHEREAU (1907–1909) Verdi
Mr. GEORGE H. TAYLOR, Secretary Reno

THE HONORARY BOARD OF VISITORS.

The Hon. G. F. TALBOT, Chairman Carson City, Ormsby County
The Hon. H. W. GRIMES Hill, Churchill County
The Hon. H. F. DANGBERG Gardnerville, Douglas County
The Hon. CHARLES B. HENDERSON Elko, Elko County
The Hon. H. F. BARTINE Goldfield, Esmeralda County
The Hon. H. C. MCTERNEY Eureka, Eureka County
The Hon. B. F. RILEY Winnemucca, Humboldt County
The Hon. J. A. MLLER, JR. Austin, Lander County
The Hon. J. A. DENTON Pioche, Lincoln County
The Hon. J. W. WILSON Nordyke, Lyon County
The Hon. W. B. PITTMAN Tonopah, Nye County
The Hon. ANDREW MAUTE Carson City, Ormsby County
The Hon. J. J. SULLIVAN Virginia City, Storey County
The Hon. N. W. ROFF* Reno, Washoe County
The Hon. R. A. RIEPPE Ely, White Pine County

THE UNIVERSITY.

President JOSEPH EDWARD STUBBS
Vice-President ROBERT LEWERS
Superintendent of Buildings and Grounds RICHARD BROWN
Assistant Registrar LOUISE M. SISSA
Librarian JOSEPH DIEFFENBACH LAYMAN
Office Secretary CAROLYN M. BECKWITH

EXECUTIVE COMMITTEE.

JOSEPH EDWARD STUBBS
ROBERT LEWERS
HENRY THURTELL
JAMES EDWARD CHURCH, JR.
PETER FRANDSEN
GEORGE J. YOUNG
RALPH S. MINOR

*Deceased, October, 1907.

STANDING COMMITTEES OF THE ACADEMIC COUNCIL.

ADMINISTRATIVE COMMITTEES.

Student Affairs.....THURTELL, YOUNG, BROWN, CHURCH, Miss BARDENWERPER, Mrs. KAYE
Athletics.....KENNEDY, BRAMBILA, SCRUGHAM
Public Exercises.....DOTEN, Miss BARDENWERPER, Miss LEWERS
Literary Contests.....Miss WIER, TRUE, HILL
Public Health.....MACK, Miss BARDENWERPER, BROWN
Delinquent Scholarship.....YOUNG, FRANDSEN, MAXWELL ADAMS
Military Affairs.....BRAMBILA, THURTELL, KENNEDY

ACADEMIC COMMITTEES.

Group Electives.....Miss DE LAGUNA, MINOR, SMITH
Admission and Advanced Standing.....MINOR, SCRUGHAM, SMITH
Registration.....FRANDSEN, YOUNG, MAXWELL ADAMS
Graduation and Thesis.....ROMANZO ADAMS, TRUE, HILL
Schedule and Examinations.....BOARDMAN, HOWE
University Publications.....CHURCH, ROMANZO ADAMS, HILL
Library.....LAYMAN, CHURCH, Miss WIER

REGISTRATION ADVISERS.

THE SCHOOL OF LIBERAL ARTS.

Freshmen, Sophomores, and Special Students.....Professor CHURCH
Juniors and Seniors.....Their Major Professors

THE SCHOOL OF GENERAL SCIENCE.

Freshmen, Sophomores, and Special Students.....Professor FRANDSEN
Juniors and Seniors.....Their Major Professors

THE SCHOOL OF AGRICULTURE.

All Students.....Professor TRUE

THE MACKAY SCHOOL OF MINES.

Freshmen and Sophomores.....Professor SMITH
Juniors, Seniors, and Special Students.....Professor YOUNG

THE SCHOOL OF MECHANICAL ENGINEERING.

All Students.....Professor SCRUGHAM

THE SCHOOL OF CIVIL ENGINEERING.

All Students.....Professor BOARDMAN

THE STATE NORMAL SCHOOL.

All Students.....Professor ADAMS

THE UNIVERSITY HIGH SCHOOL.

Students Latin and Science Courses.....Professor HOWE
Students Commercial Course.....Professor LEWERS

UNIVERSITY FACULTY.

OFFICERS OF INSTRUCTION AND ADMINISTRATION.

With the exception of the President, the names of all professors and officers in the first group whose appointment antedates April, 1907, are arranged in order of appointment to rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, assistants, and officers are arranged in their respective groups according to order of appointment to present rank.

JOSEPH EDWARD STUBBS,
President of the University, Professor of Elementary and International Law.

Instructor in Greek and Latin, Ohio Wesleyan University, 1872–75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880–86; President Baldwin University, Ohio, 1886–94; Honorary D.D., German Wallace College, 1890; President Ohio College Association, 1891–92; President of the University of Nevada, 1894–; Professor of Psychology and Ethics, 1894–95; Professor of Political Science and Ethics, 1895–1904; Professor of Elementary and International Law and Greek, 1904–; President Association of American Agricultural Colleges and Experiment Stations, 1899–1900; LL.D., Ohio Wesleyan University, 1905.

ROBERT LEWERS,
Vice-President, Professor of Political Economy and Teacher Commercial Subjects.

Teacher, Public School, Mill Station, Nevada, 1882–83; Sutro, Nevada, 1884–85; Dayton, Nevada, 1886–89; Registrar, 1890–1906; Professor of Political Economy and Principal of the Commercial School, University of Nevada, 1890–.

MARY WHITESIDES EMERY,
Emeritus Professor of Pedagogics.

Illinois State Normal School; County Superintendent of Schools, Peoria, Illinois, 1878–1890; Professor of Pedagogics, University of Nevada, 1890–1900; Principal of the Training School, 1890–91; Principal of the Normal School, 1891–1900; Honorary M.A.; (Pedagogics) University of Nevada, 1895; Professor of Pedagogics and English, University of Nevada, 1900–1902; Professor Emeritus, 1902–.

NATHANIEL ESTES WILSON,[1]
Professor of Agricultural Chemistry.

Teacher in Basin Mills Public Schools, Maine, 1886–87; B.S., Main State College (now University of Maine), 1888; Assistant Chemist, Vermont Experi-

[1] Absent on leave, 1906–1908.

ment Station, 1888–89; Graduate Student in Chemistry, Cornell University, 1889–90; Chemist, Bergenport Chemical Company (Standard Oil Company), Bayonne City, New Jersey, 1890–91; Chemist, Nevada Agricultural Experiment Station, 1891–1905; M.S., 1893; Professor of Agricultural Chemistry, University of Nevada, 1895–1900; Professor of Chemistry, 1900–06; Vice-Director of the Agricultural Experiment Station, 1902–1905; Dean of the Faculty, and Consulting Chemist to Experiment Station, 1905–06; Chemist, Experiment Station and Professor of Agricultural Chemistry, 1906–.

RICHARD BROWN,
Superintendent of Buildings and Grounds and Master of Lincoln Hall.

Cutter in United States Mint, Carson City, 1889–1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891–1899; Superintendent of Buildings and Grounds, University of Nevada, 1891–; Superintendent of University Dining Hall, University of Nevada, 1895–; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–.

THOMAS W. COWGILL,
Emeritus Professor of the English Language and Literature.

A.B., Harvard University, 1883; Professor of English, Mt. Union College, Ohio, 1884–85; Professor of Greek and English, Kansas Wesleyan University, 1886–90; Fellow in English, Vanderbilt University, 1887–88; A.M., Vanderbilt University, 1888; Teacher of Greek and Latin, St. John's School, Salina, Kansas, 1890–91; Professor of History, Rhetoric, and English Literature, University of Nevada, 1891–97; Professor of the English Language and Literature, 1897–99; Professor Emeritus, 1899–.

HENRY THURTELL,
Professor of Mathematics and Mechanics.

B.S., Michigan Agricultural College, 1888; Instructor in Mathematics, Michigan Agricultural College, 1888–90; Graduate Student in Mathematics, University of Michigan, winters of 1888–91; Assistant Professor of Mathematics, Michigan Agricultural College, 1890–91; Professor of Mechanics and Mechanical Drawing, University of Nevada, 1891–97; Graduate Student in Mathematics, University of Chicago, summer quarter, 1895; Professor of Mathematics and Mechanics, University of Nevada, 1897–; Dean of the Faculty, 1900–05; State Engineer of Nevada, 1905–07; Member State Railroad Commission, 1907–.

JAMES EDWARD CHURCH, JR.,
Professor of the Latin Language and Literature.

Teacher, District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896–(absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; President of Graduate Club, University of Michigan,

1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

LAURA DE LAGUNA,
Professor of Modern Languages.

Instructor in English, Mills Seminary, California, 1888–89; Instructor in French and English, Oakland Seminary, California, 1890–91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894–95; Student Romance Languages, Rome, Paris, 1895–96; Instructor in Modern Languages, University of Nevada, 1896–99; Assistant Professor of Modern Languages, 1899–1901; Associate Professor of Modern Languages, 1901–06; Professor of Modern Languages, 1907–.

JEANNE ELIZABETH WIER,
Professor of History.

Teacher, Public Schools, Rockwell, Iowa, 1889–92; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893–95; Student, Leland Stanford Junior University, 1896; Acting Assistant Professor of History, University of Nevada, 1899–1901; B.A. (History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901–06; Secretary Nevada Historical Society, 1904–; Professor of History, 1907–.

PETER FRANDSEN,
Professor of Biology.

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895–96; A.B., Harvard University, 1898; A.M., 1899; Tutor and Assistant in Zoölogy, Harvard University, 1898–99; Graduate Student, Harvard University, 1899–1900; Assistant in Zoölogy, Harvard University and Radcliffe College, 1899–1900; Assistant Professor of Zoölogy and Bacteriology, University of Nevada, 1900–02; Associate Professor of Zoölogy and Bacteriology, 1902–03; Professor of Zoölogy and Bacteriology, 1903–06; Professor of Biology, 1906–.

PATRICK BEVERIDGE KENNEDY,
Professor of Botany, Horticulture, and Forestry.

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900–; Associate Professor of Botany and Horticulture, University of Nevada, 1900–02; Professor of Botany, Horticulture, and Forestry, 1902–.

GEORGE G. YOUNG,
Professor of Mining and Metallurgy.

B.S., College of Mining, University of California, 1899; Analytical Assistant, Mining Department, University of California, 1899–1900; Student of Economic Deposits, and Mining and Metallurgical Practice in the Field

during summer months, 1900, Bodie District, California; 1901, in Utah, Colorado, California; 1902, in Utah and Montana; 1903–04, in Nevada and California; Assistant Professor of Metallurgy, University of Nevada, 1900–02; in charge of Nevada State Mining Laboratory, 1900–; Member of American Institute of Mining Engineers, 1900–; Professor of Mining and Metallurgy, University of Nevada, 1902–.

SAMUEL BRADFORD DOTEN,
Professor of Entomology.

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898–1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900–05; Instructor in Mathematics and Entomology, 1900–02; Assistant Professor of Mathematics and Entomology, 1902–03; Assistant Professor of Entomology, Meteorology, and Mathematics, 1903–05; Principal of the University High School and Teacher of Mathematics, Consulting Entomologist, and Meteorologist Nevada Agricultural Experiment Station, 1905–06; Entomologist, Experiment Station, and Professor of Entomology, 1906–.

ROMANZO ADAMS,
Professor of Education and Sociology.

Teacher, Public School, Bloomingdale, Wisconsin, 1886–87; Marshalltown, Iowa, 1887–88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892–94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology and Principal of the Normal Department, Western College, Iowa, 1898–1900; Graduate Student, University of Chicago, 1900–02; Fellow in Sociology, University of Chicago, 1901–02; Professor of Education and Sociology, University of Nevada, 1902–; Ph.D. (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905–.

GORDON HAINES TRUE,
Professor of Agriculture and Animal Husbandry.

B.S., University of Wisconsin, 1894; Instructor in Dairy Husbandry, Michigan Agricultural College, 1894–99; Professor of Animal Husbandry, University of Arizona, 1899–03; Chairman Executive Committee, Arizona Agricultural Association, 1901–1903; Professor of Agriculture and Animal Husbandry, University of Nevada, 1903–.

JAMES GRAVES SCRUGHAM,
Professor of Mechanical Engineering.

B.M.E., Kentucky State College, 1900; with Creaghead Engineering Company, Cincinnati, Ohio, 1900; Instructor in Physics and Drawing, High School, Fort Smith, Arkansas, 1901; Graduate Student, University of Michigan, summer, 1901; Director of Manual Training, High School, Highland Park, Chicago, 1901–03; with Metropolitan Elevated Railway, Chicago, 1902; Instructor in Mechanical Engineering, Kentucky State College, Summer

School, 1903; Assistant Professor of Mechanical Engineering, University of Nevada, 1903–05; Member of International Electrical Congress, 1904; with Abner Doble Company, San Francisco, summer, 1905–1906; Associate Professor of Mechanical Engineering, University of Nevada, 1905–06; M.E., Kentucky State University, 1906; Professor of Mechanical Engineering, University of Nevada, 1906–; Instructor in Mechanical Engineering, Summer School, University of Wisconsin, 1907.

ROBERT MAURO BRAMBILA,
Professor of Military Science and Tactics.

B.S. Agriculture, University of Nevada, 1897; commissioned Second Lieutenant of Infantry, July, 1898; served in Philippine Islands, March to October, 1899, with 23d Infantry; promoted First Lieutenant, 1899; served two years with 14th Infantry in Philippine Islands and in China, 1899–1900; Battalion Adjutant, 14th Infantry, 1899–1900; Graduate, Infantry and Cavalry School, Fort Leavenworth, Kansas, 1904; with 14th Infantry in Samar, Philippine Islands, 1905; Captain 27th Infantry, 1905; Professor of Military Science and Tactics, and Instructor in International Law and Physical Geography, University of Nevada, 1905–.

WILLIAM SIDNEY TANGIER SMITH,
Professor of Geology and Mineralogy.

B.L., University of California, 1890; Graduate Student, Johns Hopkins University, 1890–91; Ph.D., University of California, 1896; Professor of Mathematics and Natural Science, Occidental College, Los Angeles, 1894–95; Fellow in Mineralogy, University of California, 1895–97; Professor of Mathematics, State Normal School, Chico, California, 1897–98; Assistant in Chemisity, University of California, 1898; Assistant in Mineralogy, University of California, 1899–1900; Assistant Geologist, U. S. Geological Survey, 1900–07; Associate Professor of Geology and Mineralogy, University of Nevada, 1906; Professor of Geology and Mineralogy, University of Nevada, 1907–; Fellow, Geological Society of America; Fellow, American Association for the Advancement of Science.

RALPH SMITH MINOR,
Professor of Physics.

A.B., Hamilton College, 1898; Root Fellow in Science, University of Freiburg, 1898–99; A.M., Hamilton College, 1901; University of Göttingen, 1899–1902, Ph.D., 1902; Science Teacher, Little Falls High School, 1902–03; Instructor in Physics, University of California, 1903–06; in charge Physics Department, University of California, Summer Session, 1906; Associate Professor of Physics, University of Nevada, 1906; Professor of Physics, 1907–.

MAXWELL ADAMS,
Professor of Chemistry.

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890–91; A.B. (Chemistry), Stanford University, 1895; A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in

Chemistry, Leland Stanford Junior University, 1895–97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of Chemistry and Physics, State Normal School, Chico, California, 1897–1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900–01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900–06; Consulting Chemist to Diamond Match Company, 1901–06; Professor of Chemistry, University of Nevada, 1906–.

HAYWARD H. HOWE,
Professor, and Principal of the High School.

Graduate of the Mount Pleasant (Iowa) High School and Normal Institute; Principal of the Auburn (California) High School, 1863–65; Principal of the Sacramento Grammar School, 1865–69; Principal, Gold Hill (Nevada) High School, 1869–71; Principal of the Sacramento High School, 1871–72; Principal, Carson City High School, 1872–1906; Professor and Principal of the High School, University of Nevada, 1906–.

WINFRED BERDELL MACK,
Professor of Bacteriology and Veterinary Science.

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904–05; Assistant in Pathology and Bacteriology, Cornell University, 1905–06; Veterinarian and Bacteriologist, Nevada Agricultural Experiment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1907–.

HERBERT WYNFORD HILL,
Professor of the English Language and Literature.

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–1903; Graduate Student and Reader, University of Chicago, June, 1903—June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904—September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905—September, 1905; Fellow in English, University of Chicago, June, 1906—September, 1907; Professor of the English Language and Literature, University of Nevada, 1907–.

JOSEPH DIEFFENBACH LAYMAN,
Librarian.

Teacher in public schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

HORACE PRENTISS BOARDMAN,
Professor of Civil Engineering.

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888—August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891—January, 1892; Instrumentman, Memphis Artesian Water Co., January—September, 1892; B.S. (Civil Engineer), University of Wisconsin,

1894; with Engineering Department Sanitary District of Chicago, June, 1894; December, 1896, on Topographic Surveys and in charge of Cement Testing Laboratory; miscellaneous engineering work, Chicago, January–August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897–August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901–March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway, Bridge and Building Department, January–August, 1905; Superintendent Fitzsimmons & Connell Company (bridge substructure), August–December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer in charge branch canal projects, Sanitary District of Chicago, January–August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.

KATE BARDENWERPER,
Assistant Professor of Domestic Science.

Graduate, State Normal School, San José, California, 1880; Teacher, Public School, Carson City, Nevada, 1880–1886; First Assistant, High School, Carson City, 1886–94; Critic Teacher Training School, University of Nevada, 1894–99; Student, Leland Stanford Junior University, 1898–99; Student, University of California, 1900–01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S. (Domestic Science), 1901; Instructor in Domestic Science University of Nevada, 1904–05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Domestic Science, University of Nevada, 1905–.

SANFORD CROSBY DINSMORE,
Assistant Professor of Agricultural Chemistry.

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903–05; Chemist, Nevada Agricultural Experiment Station, 1905–; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906–.

KATHERINE LEWERS,
Assistant Professor of Freehand Drawing.

Student, St. George's Art School, Glasgow, 1893–94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894–97; Student with Howard Helmick, Washington, D. C., 1897–99; received prize scholarship New York School of Design, 1900; Graduate of New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905–; Photographer, Nevada Agricultural Experiment Station, 1905–; Assistant Professor of Freehand Drawing, 1907–.

SAMUEL UNSWORTH,
Instructor in Greek.

B.A., St. Stevens College, 1875; M.A., 1878; S.T.B., General Theological Seminary, 1878; established St. Paul's Parish, Salt Lake, 1878; Rector of the Church of the Good Shepherd, Ogden, 1881–94; Trinity Church, Reno, 1894–; Instructor in Greek, University of Nevada, 1894–1902, 1905–.

KATHERINE RIEGELHUTH,
Instructor in German and English.

B.A., University of Nevada, 1897; Student, English and German, University of California, 1897; Instructor in German, University High School, 1905–.

EMILY BERRY,
Instructor in History and English.

B.A., University of Nevada, 1906; Student, English, University of California, 1905; Instructor in English and History, University of Nevada, 1906–.

ACHILLES CALLOWAY GOUGH,
Instructor in Mechanical Engineering.

B.M.E., Kentucky State College, 1906; with H. F. Gough & Sons, Machine and Carriage Builders, Benton, Kentucky, 1893–1900 and 1902–04; with Fairbanks-Morse Company, Beloit, Wisconsin, summer 1906–07; Instructor, Mechanical Engineering, Iowa State College, 1906–07; Instructor in Mechanical Engineering, University of Nevada, 1907–.

JOHN JAMES VAN NOSTRAND, JR.,
Instructor in Latin.

A.B., University of Chicago, 1905; Graduate Student, Uuiversity of Chicago, 1905–06; Instructor in Latin and Oratory, Illinois College, Jacksonville, Illinois, 1906–07; Instructor in Latin, University of Nevada High School, 1907–.

MRS. KATE CONGDON WOOD,
Instructor in Vocal Music.

Student, Northwestern Conservatory, Minnesota, 1891–92; Studied voice with A. W. Porter at Minneapolis, 1892–95; Solo work and private teaching 1895–04; Graduate, National School of Public School Music Methods, 1904; Supervisor of Music in High and Grammar Schools of Elko, Nevada, 1904–06; Instructor in Vocal Music, University of Nevada, 1907–.

CHARLES LEROY BROWN,
Assistant in Biology.

Teacher in public schools, Oregon, California, and Nevada, 1894–1905; Student at Pacific College, 1894–95; Student at Christian College, 1897–98; Student at University of Nevada, 1905–; Assistant in Biology, University of Nevada, 1906–.

MILES BRYCE KENNEDY,
Assistant in Metallurgy.

B.S., Mining Engineer, University of Nevada, 1907; Assistant in Metallurgy, 1907–.

EARL NEWTON CLINGMAN,
Assistant in Mechanical Engineering.

Stationary Engineer with Morrow Brothers, Chicago, Illinois, 1899–1901; with Chicago and Northwestern Railway, 1901–07; Assistant in Mechanical Engineering, University of Nevada, 1907–.

ALICE EUNICE ARMSTRONG,
Assistant Librarian.

Assistant Librarian, Fresno Free Public Library, June, 1896; Librarian, October, 1896—June, 1905; Acting Librarian, University of Nevada, 1905–07; Assistant Librarian, 1907–.

LOUISE MARY SISSA,
Assistant Registrar.

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884–92; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893–1901; House Mother, Rowland Hall, Salt Lake City, 1901–05; House Mother, Miss Head's School, Berkeley, California, 1905–06; Assistant Registrar, University of Nevada, 1906–.

CAROLYN M. BECKWITH,
Secretary to the President.

Assistant Office Secretary, 1902–03; Secretary to the President, 1904–.

MRS. A. E. KAYE,
Mistress of Manzanita Hall.

Mistress of Manzanita Hall, 1904–.

MRS. M. E. PORTER,
Matron of University Hospital.

Matron of University Hospital, 1907–.

AFFILIATED ORGANIZATIONS.

THE STATE MINING LABORATORY.

STAFF

JOSEPH EDWARD STUBBS.....President
GEORGE J. YOUNG.....Analyst in Charge
W. S. TANGIER SMITH.....Geologist and Mineralogist
MILES BRYCE KENNEDY.....Student Assistant
CAROLYN M. BECKWITH.....Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have the same analyzed and assayed without cost. (Secs. 1402–1405, incl., Compiled Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that the same must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens, or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be sent to said citizens, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which it came and all other matters that may be beneficial touching the same."

In compliance with the above section, reports have been

rendered, and a record book kept. In order to make reports as accurate as possible, it is suggested that citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning value.

In respect to the analytical and assaying work, the Department of Mining, which has been assigned this work by the President of the University, has adopted the following procedure: Specimens and samples are first carefully examined, and, if a quantitative analysis is necessary to determine the value, the same is made. In all cases where the results of a preliminary examination are doubtful, a quantitative analysis is made. No quantitative work is done upon small hand specimens, unless for the purpose of identifying a mineral, as the results of such work are almost always misleading. Assays are made in duplicate and values determined. Reports are made as follows: Where the value of gold is above $5 per ton, "The gold assay value is above $5 per ton"; where the value is less than, but still in the neighborhood of, $5 per ton, "The gold assay value is less than $5 per ton"; where the gold exists in traces only, "Gold is present in traces only." A similar form of report is given in the case of silver and of combined gold and silver values. The State law provides that returns for gold and silver above $5 per ton in value shall read, "Test for gold" or "Test for silver." As the meaning conveyed by these terms is not well understood, the foregoing form of report was adopted as fulfilling the intentions of the law and at the same time being more intelligible to the prospector or other persons receiving the report. The accuracy of the quantitative work is of the same grade as that for rapid "commercial analyses," and is unchecked unless otherwise stated. Samples and specimens are examined in the order in which they are received.

Inasmuch as the work is subordinated to the work of instruction, returns upon samples and specimens are sent out

sometimes after a considerable lapse of time. The Department endeavors to send out reports as soon as possible. The time varies from three to ten days after receipt of samples.

Whenever possible, citizens who avail themselves of the privileges afforded them by this Act should send in ample quantities of material, which facilitates the examination and gives more trustworthy results than are obtained from small specimens. Samples in addition to hand specimens should be sent for examination. All samples and hand specimens should be distinctly marked with the name of consignee and wrapped separately, and a letter giving locality and other information should accompany them.

THE AGRICULTURAL EXPERIMENT STATION.

THE BOARD OF CONTROL.

The Hon. OSCAR J. SMITH (1905–1909), Chairman Reno
The Hon. CHAS. B. HENDERSON (1907–1911) Elko
The Hon. JOHN SUNDERLAND, JR. (1907–1911) Reno
The Hon. CHARLES R. LEWERS (1907–1909) Reno
The Hon. J. E. SOUCHEREAU (1907–1909) Verdi
MR. GEORGE H. TAYLOR, Secretary Reno

STAFF.

J. E. STUBBS, D.D., LL.D., Director Publications
NATHANIEL E. WILSON Chemistry
PETER FRANDSEN, M.A. Consulting Zoölogist
P. BEVERIDGE KENNEDY, PhD. Botany, Horticulture and Forestry
SAMUEL B. DOTEN, B.A. Entomology
GORDON H. TRUE, B.S. Agriculture and Animal Husbandry
WINFRED B. MACK, D.V.M. Bacteriology and Veterinary Science
SANFORD C. DINSMORE, B.S. Chemistry
J. E. CHURCH, PhD. Coöperative Observer in Climatology and Meteorology
THEODORE W. CLARK Superintendent of Farm
MRS. T. W. COWGILL, M.A. Librarian
KATHERINE LEWERS Photographer
CAROLYN M. BECKWITH Stenographer

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated $15,000 annually for the support of an Agricultural Experiment Station in each State and Territory of the Union.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; entomology, especially in its economic relation to agriculture; in fact, the solving of all problems pertaining to agriculture which are or may be of importance to this State.

The results of the work of the Station are made public through bulletins and reports, which are sent free to all residents of the State who desire them.

ASSOCIATION OF UNIVERSITY ALUMNI.

President.....R. M. BRAMBILA, '97
Vice-President.....GUY V. WALTS, '98
Secretary-Treasurer.....LULU BLUM TWADDLE, '95

EXECUTIVE COMMITTEE.

JOHN W. WRIGHT, '05. EDMUND D. LACHMAN, '97.

ASSOCIATION OF NORMAL ALUMNI.

President.....Mrs. MARIAN EDMUNDS CAHLAN, '95
Secretary-Treasurer.....FRANCES E. WRIGHT, '04

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; entomology, especially in its economic relation to agriculture; in fact, the solving of all problems pertaining to agriculture which are or may be of importance to this State.

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ASSOCIATION OF UNIVERSITY ALUMNI.

President.....R. M. BRAMBILA, '97
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Secretary-Treasurer.....LULU BLUM TWADDLE, '95

EXECUTIVE COMMITTEE.

JOHN W. WRIGHT, '05. EDMUND D. LACHMAN, '97.

ASSOCIATION OF NORMAL ALUMNI.

President.....Mrs. MARIAN EDMUNDS CAHLAN, '95
Secretary-Treasurer.....FRANCES E. WRIGHT, '04

UNIVERSITY ADDRESSES.

SECOND SEMESTER, 1906–1907.

April 19—Professor S. S. SEWARD, Jr: "The Spirit of Undergraduate Life."

May 13 and 14—Mrs. ROSE V. BERRY, Lectures and Musicales. 1—"Schumann." 2—"Beethoven." 3—"Mendelssohn."

COMMENCEMENT, 1907.

1. *High School Commencement Address*, Friday, May 31, 1907, by the Reverend LESLIE M. BURWELL of Reno, Nevada.

2. *Annual Baccalaureate Sermon*, Sunday, June 2, 1907, by the Reverend BRADFORD LEAVITT, Pastor of the First Unitarian Church of San Francisco, California: "And every man who hath this hope in him purifieth himself even as he is pure."—I John 3, 8.

3. *Annual Commencement Address*, Wednesday, June 5, 1907, by the Honorable GEORGE A. BARTLETT, Representative in Congress from Nevada: "Exercise the Right of Citizenship."

FIRST SEMESTER, 1907–1908.

September 6—Professor GEORGE J. YOUNG: "Scholarship."

September 18—Professor H. BIGELOW of the U. S. Weather Bureau: "Current Topics in Meteorology."

September 27—Miss MABELLE BIGGART: "What Does America Expect From the College-bred Men and Women of Today?"

Regent CHARLES R. LEWERS: "The Spirit of Athletics."

October 3—The Reverend Dr. GEORGE C. ADAMS of San Francisco: "The Bible."

The Reverend T. W. PATCHELL of San José: "The Manliness of Christianity."

The Reverend CHARLES R. BROWN of Oakland: "The Wider Horizon."

October 11—Professor R. S. MINOR: "A Program."

SECOND SEMESTER, 1907–1908.

January 31—The Reverend Dr. E. J. BULGIN: "What I Believe and Why I Believe It."

February 14—Mr. G. V. SHOUP, Attorney-at-Law, Reno: "Gambling in Reno."

March 6—The Reverend JENKIN LLOYD JONES, Pastor of All Souls Church (Independent) of Chicago: "Fundamental Reverences."

March 20—JAMES E. RUSSELL, Dean of Teachers' College, Columbia University: *a.* "A College Education, Its Meaning and Its Importance."

b. "The Educational Crisis in America." *c.* "Honesty in the Teacher and the Taught."

March 26—PAUL S. REINSCH, Professor of Political Economy in the University of Wisconsin: *a.* "Japanese Politics." *b.* "The Present Situation in Russia." *c.* "The Empire and Republic of Brazil." *d.* "Fleets of the World Powers."

April 3—Professor WINCENTY LUTOSLAWSKI, of the Polish University of Krakow: *a.* "The Development of Will Power." *b.* "Poland." *c.* "Plato."

ORGANIZATION AND ADMINISTRATION.

FOUNDATION.

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko by a law approved March 7, 1873, but was removed to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University proper begins with the academic year 1886–87.

The State Normal School was authorized by an Act of the Legislature approved February 7, 1887, and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS.

The University maintains the following Colleges and Schools, which aim to meet the best ideas and ideals of modern University life and training:

I. The College of Arts and Science:
 1. The School of Liberal Arts.
 2. The School of General Science.

II. The College of Agriculture and Domestic Science
 1. The School of Agriculture.
 2. The School of Domestic Science.

III. The College of Engineering:
 1. The Mackay School of Mines.
 2. The School of Mechanical Engineering.
 3. The School of Civil Engineering.

IV. The State Normal School.

V. The University High School.

REGENTS.

The general management and control of the University is vested in a Board of Regents. There are five members of this Board, who are elected by the people.

THE PRESIDENT.

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be Chairman of the Academic Council and of the Executive Committee of the Academic Council, and ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, subject to the approval of the Academic Council and Board of Regents, appoint the Executive and other standing committees hereinafter designated as administrative and as academic and shall name the chairman of such committees.

THE VICE-PRESIDENT.

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE REGISTRAR.

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the students and the administrative and academic committees.

He shall prepare, subject to the approval of the President and the Executive Committee, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are

provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be secretary of the council and shall keep a record of its proceedings.

THE ACADEMIC COUNCIL.

The Academic Council consists of the President of the University, all professors and associate professors, the Registrar, the Librarian, such assistant professors as have been upon the rolls of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Regents, determine.

The Academic Council is vested with all of the powers and duties usually vested in the faculties of similar institutions to discuss and to decide upon all matters of internal policy, except as herein otherwise provided. All general University regulations, statutes and rules as to the matters within the province of the faculty, shall be initiated in and passed by the Academic Council, and shall be in force, subject to the power of disapproval in the Board of Regents and in the President of the University. However, no regulation, statute, or rule involving a change in the educational policy of the University in respect to the requirements of admission, the course of study, or the conditions of graduation, shall take effect as above until the same shall have been submitted to the Board of Regents for their approval.

The Academic Council shall formulate the duties and control the policy of the several committees, excepting that appeals from the decisions of the several committees shall be made to the Executive Committee.

The Council shall recommend to the President of the University, and he to the Board of Regents, the candidates for graduation.

A majority of its members shall constitute a quorum of the Academic Council.

COMMITTEES.

THE EXECUTIVE COMMITTEE.

The Executive Committee shall consist of the President, Vice-President and five members of the Academic Council of the rank of Professor or Associate Professor. These members shall be appointed by the President of the University and approved by the Academic Council and the Board of Regents.

All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, and for the abolition of departments or chairs, shall be submitted by the President to the Executive Committee for approval before they may be submitted to the Board of Regents for its action.

In all cases, in presenting such matters to the Board of Regents, the President shall state whether or not they have the approval of the Executive Committee.

The Executive Committee shall advise the President concerning any other matters which they may choose to refer to it.

The Executive Committee shall assign not more than ten students of the Freshman and the Sophomore classes to a professor or an associate professor, whose duty it shall be to look after the habits of study and habits of life of any student placed under his care.

OTHER STANDING COMMITTEES.

The other standing committees shall be grouped as follows:

Administrative—

1. Student Affairs.
2. Athletics.
3. Public Exercises.
4. Literary Contests.
5. Public Health.
6. Delinquent Scholarship.

7. Military Affairs.

Academic—

1. Group Electives.
2. Admission and Advanced Standing.
3. Registration.
4. Graduation and Theses.
5. Schedule of Recitations and Examinations.
6. University Publications.
7. Library.

(*a*) Standing committees shall be appointed by the President, subject to the approval of the Academic Council and the Board of Regents.

(*b*) Standing committees shall be appointed annually, and shall enter upon their duties the first of January of each year.

SPECIAL COMMITTEES.

Special committees may be appointed by the President of the University, to which the Academic Council may assign the consideration of any matter within its jurisdiction.

THE COLLEGE FACULTIES.

The college faculties shall have the directing of the educational policies in their respective colleges, and shall recommend to the Academic Council changes in the requirements of admission, the course of study, and the conditions of graduation.

ADVANTAGES AND EQUIPMENT.

ADVANTAGES OF SITUATION.

Reno, the seat of the University, is a thriving community of fifteen thousand inhabitants, situated in the beautiful Truckee Valley, and at the junction of three railroads; namely, the Southern Pacific Railroad, a trunk line between the East and the West; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railroad. The noble mountains which encircle the valley, the pure air and sunshine give the town an enviable reputation for health and beauty. The schools are excellent and the numerous churches are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. The proximity of Reno to the famous Comstock Lode and the mines of Tonopah and Goldfield, and also the copper mining interests of eastern Nevada, enables the School of Mines to offer a large amount of practical training and experience in mining operations.

FUNDS.

The endowments and appropriation on which the University has been founded and maintained are the following:

1. Donation of 21.15 acres of land by the Central Pacific Railroad and erection of a building in 1873-74 by the citizens of Elko at a cost of more than eighteen thousand dollars.

2. Removed to Reno by an Act of the Legislature approved by the Governor March 7, 1885. The Board of County Commissioners of Washoe County paid to Elko County $20,000 and to the Board of Regents $5,000 to be expended in purchasing a site at Reno and beginning the construction of a building thereon.

3. The fund derived from the Congressional Land Grant

of July 2, 1862, the interest of which is included in the biennial appropriation.

4. Various appropriations by the State Legislature for buildings and other specified purposes.

5. The biennial appropriation by the State Legislature for the support of the University.

6. The Agricultural Experiment Station Fund *for research only* of $24,000 a year.

7. The Morrill College Fund of $30,000 a year for Agriculture and Mechanic Arts, apportioned to the College of Agriculture and the College of Engineering.

8. The gift of the farm to the University by the citizens of Washoe County for the benefit of the Agricultural Experiment Station. This farm consists of 60 acres of good land near the University and 90 inches of water annually. It is worth now at least $40,000.

BUILDINGS AND GROUNDS.

The University Campus has an aera of thirty-eight acres and is beautifully located on an eminence overlooking the city. There are thirteen buildings now in use, or nearing completion.

MORRILL HALL.

Morrill Hall is a three-story brick building with a large basement. The offices of the President and administration of the University and the Department of Mathematics occupy the first floor, the Library occupies the entire basement, class rooms of Ancient Languages and History and the Faculty and Social room occupy the second floor, while the third floor is given to the use of the University Commercial School and the Department of Drawing.

STEWART HALL.

Stewart Hall is also a three-story and basement structure. The first floor will be occupied after September, 1908, by class rooms for Education, Modern Languages, and Young Woman's Christian Association. The second and third floors are devoted to the uses of the University High School and

the Departments of English and Entomology. The basement is occupied by the Department of Domestic Science and the Office of the Superintendent of Buildings and Grounds.

HATCH STATION.

Hatch Station formerly occupied by the Department of Mining and Metallurgy, is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the Departments of Agriculture, Botany, and Horticulture, and the Station Library. The second floor is given to the Departments of Zoölogy, Botany, and Bacteriology; and the third floor is occupied by the Departments of Zoölogy and by the Station Photographic Laboratory.

THE MACKAY MINING BUILDING.

The Mackay Mining Building, the recent gift of Clarence H. Mackay, is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and library occupy the space between the wings. The first floor contains the geological lecture room, office, and laboratory; chemical laboratory, weighing rooms, library, and drafting-room; geological museum, assaying laboratory, and metallurgical and mining laboratory; the second floor, the mineralogical and research laboratories, mining lecture room and offices.

MECHANICAL BUILDING.

The ground floor of the Mechanical Building contains the machine shop, the blacksmith shop, and the boiler room. The wood-working shop occupies the second floor, and is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools. The machine shop is furnished with a tool-room lathe, screw-cutting lathes, a polishing lathe, a shaper, a universal milling

machine, a universal cutter grinder, bench vises, wet and dry emery wheels, alternating and direct current dynamos, and a tool room equipped with small machine tools and experimental apparatus for the use of mechanical engineering students. The blacksmith shop has forges and the necessary tools.

THE PHYSICS BUILDING.

The Department of Physics will occupy, after September, 1908, the substantial two-story brick building, now used by the School of Mines. The first floor will contain the laboratories, store room, and shop. The second floor will contain a lecture room, an apparatus room, and an office.

CHEMISTRY BUILDING.

The Chemistry Building is a commodious stone building, which houses the Chemical Department of the Experiment Station. On the first floor is located the laboratory for qualitative analysis and general chemistry, accommodating sixty-five students, and the laboratory for quantitative analysis, accommodating thirty-six students. Stockrooms, balance rooms, and a laboratory for special work, are also on this floor. On the second floor is a lecture room, the Experiment Station laboratory, a large stockroom, a room for preparing apparatus for demonstration of experiments before classes, an office and a suite of rooms which will be furnished for an organic laboratory. In the basement is a large acid and chemical room and the boiler room.

LINCOLN HALL.

The State Legislature, recognizing the importance of placing the benefits of the University within the reach of all the deserving young men and women of the State, authorized the building of two student halls, after the plan of such halls in use by students of the larger Eastern colleges, and appropriated thirty-five thousand dollars for the purpose. The first of these two buildings is known as Lincoln Hall, and is a tasteful and comfortable home for one hundred young men. The plans of Lincoln Hall were drawn after a careful study

of the best modern college halls, and seem to meet every requirement of a cultivated taste.

MANZANITA HALL.

The second building, known as Manzanita Hall, is a delightful home for young women. It is located upon the plaza in the southwest part of the Campus, and overlooks the town and the valley. The construction material is brick and granite. The architectural features are those of a commodious private dwelling. Besides the single and double rooms, which are sufficient for forty young women, there is a reading room and a parlor for the students and a private parlor and sitting room for the Mistress of Manzanita Hall.

MANZANITA ANNEX.

Manzanita Annex is a temporary structure, accommodating twelve young women, and was added to Manzanita Hall in the fall of 1907 to meet the urgent requirements for additional dormitory room.

THE GYMNASIUM.

The Gymnasium is a modern structure 60 feet wide and 120 feet long. It is equipped both as an armory for the use of the military department and as a gymnasium for athletic training. The equipment is modern and ample for all college purposes. Convenient toilet rooms with hot and cold water and lockers for the use of all students are provided. The Gymnasium, on account of its convenience and size, is also used as an assembly hall for General Assembly and the more important University functions.

THE PRESIDENT'S HOUSE.

The home of the President is situated on the southeast corner of the Campus. It is colonial in the general style of its architecture and is a fine, commodious home, an ornament to the University as well as a suitable residence. It was built at a cost of $9,418.70. The ground upon which the house is built was leased by the Regents of the University, but when the Legislature appropriates the money to pay for the cost of building, the house becomes the property of the University.

THE HOSPITAL.

Between the Gymnasium and Lincoln Hall is situated the University Hospital. This is a one-story brick building and contains six rooms. Entrance is from a southern portico into a reception hall, which is for the use of convalescents. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. Students are well cared for by a competent nurse and may have any physician whom they or their parents prefer.

EVANS' FIELD.

The beauty and convenience of the Campus has in recent years been greatly enhanced through the leasing to the University by the late Regent Evans of a plot of ground adjoining the Campus on the north. This plot of ground, named Evans' Field in his honor, is a natural stadium, such as was used at the ancient Olympian games, and on account of its seats of turf could be made an ideal athletic field at a trifling expense.

LIBRARIES AND LABORATORIES.

THE UNIVERSITY LIBRARY.

The University Library, consisting of stackroom, office, and reading room, is located in the basement of Morrill Hall. It contains fourteen thousand bound volumes, and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works and reference works of various kinds. The books are catalogued according to the Dewey Decimal Classification System. The reading room is supplied with daily and weekly papers, and with many of the best scientific and literary periodicals. The library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. To the general public is extended the use of the library under such restrictions of the time for which

a book may be withdrawn as are necessary to prevent interference with the work of the students.

THE STATION LIBRARY.

The Agricultural Experiment Station Library of nearly sixteen hundred bound volumes and a large number of pamphlets, is on the main floor of the Hatch Station Building. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, general works on agriculture and related sciences, and on irrigation, and herd books of live-stock associations. Many current agricultural periodicals are on the tables in the reading room. The library is cata logued and classified, and suited for ready reference. It is open daily, and while intended primarily for the use of the Station Staff, it is also accessible to the public.

THE PHYSICAL LABORATORY.

The work of the Physical Laboratory is carried on along four distinct lines, each with its separate rooms and its own special equipment. The general laboratory contains a Laboratory for High School Physics, with an equipment permitting a section of 48 students to work simultaneously on the same exercise; a Freshman Laboratory for work in Mechanics and Heat; a Sophomore Laboratory for work in Sound, Light, Magnetism, and Electricity; and a Shop.

The equipment of the freshman and sophomore laboratories, which is entirely new, consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the work.

Aside from the three main laboratories, which will be established in the new quarters, there will be a separate room for some experiments in Heat; a weighing room, con-

taining four Becker balances for general use; a photographic dark room; and a department library and reading room, which is also available for student use while writing up the laboratory exercises.

The department shop will contain a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular and linear dividing engine, and a direct current dynamo with two armatures, furnishing current at various voltages.

All of the laboratories will be supplied with water, gas, and electricity.

THE CHEMICAL LABORATORIES.

The *Laboratory for Quantitative Analysis* is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, as well as a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

The *Laboratory for Qualitative Analysis* will accomodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas and fume closets.

In the *Experiment Station Laboratory* those students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

BIOLOGICAL LABORATORIES.

General Biological Laboratory—This laboratory is used by the elementary classes in Zoölogy, Botany, and Hygiene. It is equipped with dissecting tables, trays, sinks, compound microscopes, dissecting microscopes, microtomes, mounting materials, chemicals, balances, etc.

Histological and Embryological Laboratory — This is equipped with all the necessary apparatus for doing general or research work in these subjects.

Bacteriological Laboratory—This laboratory has been recently fitted up with new apparatus for research in Pathology and Bacteriology. It is used chiefly for experiment station work but is available for demonstration purposes for students taking elementary Bacteriology, and can accommodate a few students who desire to do more advanced work.

The *Station Botanical Laboratory* is also used by advanced students in Botany and Horticulture.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in Entomology. It contains also the photographic laboratory of the Experiment Station.

LABORATORIES FOR GEOLOGY AND MINERALOGY.

The Department of Geology and Mineralogy is kept in close touch with the Department of Mining and Metallurgy, and every effort is made to give practical value to the work. While, however, all courses in Geology and Mineralogy are thus treated as bearing directly upon mining as an active industry, at the same time, their intrinsic value for scientific training is not lost sight of, and a complete theoretic presentation of the subject is aimed at in all cases.

The department is provided with laboratories for both Geology and Mineralogy; with reference collections illustrating the minerals, and fossils; and class collections for study and determination. The petrographical laboratory is equipped with apparatus for making thin sections, and with petrographical microscopes and the necessary accessories; it has also a set of mineral thin sections cut in definite directions, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides, furnishes additional illustrative material for lecture work.

In the new Mackay building the mineralogical laboratory will be larger and more convenient, being arranged, for the

present, for the accommodation of single sections of 32 students. There will be, in addition, a separate laboratory specially fitted up for microscopic work.

One wing of this building will be devoted to a museum, in which the collections of the departments may be suitably housed and exhibited. These collections include, in addition to general material, the nucleus of a collection illustrating the mineral resources of the State of Nevada, with specimens for comparison from other important mining regions.

This State presents excellent opportunities for geological study and investigation, the rocks and varied structural features being everywhere well exposed. Besides sedimentary rocks of various ages, there is a great variety of igneous rocks, ranging from coarse to fine-grained, and from acid to basic types. The physiographic and structural features include the much discussed Basin Range structure, the deposits, terraces, and other records of the Quaternary Lake Lahontan, and of other ancient lakes. Although these features are already more or less well known, much yet remains to be investigated in connection with them, while, in addition, there are in the State numerous problems as yet untouched, which involve both the practical and theoretical aspects of geology. To the student of mining, in particular, unusual opportunities are presented, in the mining regions of this State and in the adjacent areas of the Sierra Nevada, for the investigation of problems connected with ore deposition.

These Laboratories are provided with collections illustrating the main types of minerals, rocks, and fossils for reference, and class collections for study and determination. The petrographical laboratory is equipped with apparatus for making thin sections, and petrographical microscopes with all the necessary accessories, a set of mineral thin sections cut in definite directions, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. Blowpipe and other chemical work is also provided for, the quantitative

work being done in the chemical laboratory of the Mining Department, which is conveniently and directly connected with the Mineralogical Laboratory.

LABORATORIES OF THE MINING DEPARTMENT.

The *Chemical Laboratory* is divided into two parts: the working laboratory proper, which is equipped with the usual desks, sinks, hoods, hot-plates and air baths, and the weighing room, which is equipped with two analytical balances, pulp balances, and chemical lockers. Each student has a separate locker for his work.

The *Assaying Laboratory* comprises the following rooms: the furnace and pulp room, parting, weighing, and storerooms. The furnace room is equipped with 3 double muffle furnaces burning soft coal, 4 oil-fired crucible furnaces, 4 oil-fired muffle, 1 coke-melting and 2 coke-muffle furnaces. The parting room is equipped with gas-heated hot-plates, cement tables, hood, and bullion rolls. The weighing room contains 4 Becker bead balances, an Ainsworth, an Oertling, and a Keller balance. The storeroom is amply provided with shelving and drawers for assaying and chemical supplies.

The *Metallurgical and Mining Laboratory*—The metallurgical equipment includes the following machinery, all of commercial size: a 3-stamp battery and feeder, amalgamating plates on steel table, a 4-foot Union concentrator, a Wifley concentrating table, a 2-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of 1 ton capacity, a 3x8 roasting furnace, an 18-inch amalgamating pan, a sample crusher, and sample grinder.

The mining machinery equipment consists of an Ingersoll-Sergeant drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any

mesh coarser than a 40 screen; coarse and fine concentration of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls—the roasting-furnace enabling ores to be given a chloridizing or an oxidizing roasting before treatment in the vats—and, finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-h.p. and a 5 h.p. induction motor drive all the machinery through separate line shafts.

STEAM AND GAS LABORATORY.

The equipment includes: two steam engines, one gas engine, three steam engine indicators, one gas engine indicator, Alden dynamometer, planmeters, speed indicators, gages, Crosby gage tester, calorimeter, gas analysis outfit, pyrometer, and other pieces of apparatus essential in making complete tests on steam and gas machinery.

ELECTRICAL LABORATORY.

The equipment consists of one direct and one alternating current generator, one direct and three alternating current motors, three transformers, one Queen portable testing set, four voltmeters, six ammeters, three wattmeters, three multipliers, rheostats, and numerous other smaller pieces of apparatus.

SCIENTIFIC COLLECTIONS.

The Department of Geology and Mineralogy has a collection of minerals, rocks, and fossils illustrating the more important general types. There is also the nucleus of a collection illustrating the mineral resources of the State of Nevada and material for comparison from other important mineral regions.

The Experiment Station has made a small collection of bird skins representing a majority of the species found in the State. A beginning has also been made in collecting the rodents of the State, mammal skeletons, alcoholic specimens,

etc. Mr. F. J. Steinmetz of Carson City recently donated his valuable private collection of birds' eggs and nests to the University.

The very complete Station Herbarium is also used for University purposes. A small beginning has been made in the collection of the lower cryptogamic forms of plant life.

PUBLIC LECTURES.

GENERAL ASSEMBLY.

A general assembly of all the students of the University and all the members of the Faculty is held every Friday. This is the lecture service of the week, and is under the special direction of the President of the University. These weekly lectures are given not only by the members of the Faculty, but also by men and women of special eminence in particular fields of study and travel and business enterprise.

EXTENSION LECTURES.

Lectures on various subjects by members of the Faculty of the University and Staff of the Agricultural Experiment Station will be given at different points in the State as arrangements can be made between the local communities and the University.

GIFTS TO THE UNIVERSITY.

The gifts to the University this year make it a red letter year in the history of the University.

1. On the tenth of June, 1908, there will be dedicated to the University of Nevada the splendid building known as the Mackay School of Mines. This building is the joint gift of Mrs. Marie Louise Mackay and of Mr. Clarance Hungerford Mackay, as a memorial of Mr. John William Mackay, one of the owners of the famous Comstock Lode and President of the Mackay-Bennett Cable Company. This building is a fine specimen of colonial architecture planned by McKim, Mead and White, Architects, of New York, with special reference to the needs of the Department of Mines and of Geology, and is adapted in every detail to the purpose of mining

instruction. The building and equipment represent an expenditure of $100,000.

2. There will be unveiled on the tenth of June, 1908, a life-sized, bronze statue of Mr. John William Mackay, by Gutzon Borglum. This statue stands about forty feet in front of the Mining Building, facing the quadrangle. Mr. Mackay is in the garb of a miner, as he was dressed and about his work in Virginia City. His right hand rests upon a miner's pick and his left is holding a piece of ore, which has been taken from the Comstock Mines. The attitude is dignified and expresses repose in the midst of action. Mr. Mackay was distinguished among his associates for his kind disposition, for genius in managing large enterprises and his just dealings with men. Mr. Mackay appears to be looking out past the buildings upon the University campus, across the Valley of the Truckee, toward Mt. Davidson, at the foot of which he spent so many of his active years as a miner. This statue is the joint gift of Marie Louise Mackay and Clarence Hungerford Mackay to the State, as well as to the University of Nevada.

3. The beautiful quadrangle with its blanket of fine soil, its brick and macadam walks, the brick platforms in front of the Mackay Mining Building and the Mechanical Building, the lawn of Kentucky bluegrass just sown, the trees of elm and Carolina poplar, has been made possible also by the generosity of Mr. Mackay at an expense of $23,000.

4. Beginning with the first day of June, 1908, the Mackay School of Mines is to receive, also through the gift of Mr. Mackay, the sum of $6,000 a year, for five years, for the maintenance of the Mackay School of Mines.

The opportunities for this Mining School of the University are very great, situated as it is in the midst of the mining interests of one of the great mining States of the Union.

5. By the will of Mr. David Russell, a pioneer in stock raising and general ranching, who resided near Loyalton, California, and who died September 7, 1906, the University

of Nevada will receive from $500 to $1,000 per year. Mr. Russell expressed himself as wishing this money to be given to needy and deserving students.

NEEDS OF THE UNIVERSITY.

1. Among the needs of the Library is a library building to cost with furnishings $200,000. The present space allotted to the Library, the basement of Morrill Hall, is inadequate. New books are rapidly accumulating, and during the last two years seven new book-stacks have been required. It is difficult to see where any more stacks can be placed in the present stackroom to meet the needs of the constant growth. Hence a new and larger abode for the Library is needed. Moreover, there should be a building especially designed and adapted to the needs of a library, prominent among which is a sufficient amount of light, which is not obtained in the basement. The book-stacks are necessarily large, and hence shut off the light from the windows, the Librarian frequently being obliged to use the light of a match in order to find a book. The new Library building should provide for the admission of light from above, through skylights, which would insure the diffusion of a good light throughout the library. Another fact contributing to the need of a new building is the danger of fire in the present library. If the books were burned, some of them could not be replaced.

2. A biological building and museum for the use of the Department of Biology, the museum wing of this building to be used for the scientific collections in natural history so that they can be made available to students and to the public.

3. A physical laboratory. Only within the past two years has the University had a physical laboratory. It has made a very good beginning, but it needs from $5,000 to $10,000 to provide for more extensive equipment than it now possesses and for refitting the old Mining Building, which has been set apart for its use.

PHYSICAL TRAINING AND ATHLETICS.

The University is provided with an excellent gymnasium, and, when funds permit, will place a director in charge of the Department of Physical Training.

An athletic field of six acres loaned to the University by Regent J. N. Evans, recently deceased, has been set apart and equipped especially for open-air sports. The Campus provides room for tennis courts, as well as for the military drill field. The policy of the University is to foster the spirit of honor and gentlemanliness in athletics, to suppress evil tendencies, and to see to it that athletic sports shall not encroach upon the claims of scholarship.

RULES GOVERNING STUDENTS PARTICIPATING IN ATHLETICS.

To represent the University of Nevada in any public contest, a student must conform to the following rules:

SECTION I.

RULE 1. He must be an amateur.

RULE 2. If a candidate for a degree, he must attend regularly all the exercises of his class.

RULE 3. If a special student, he must give evidence of good faith regarding his intention to remain a full year in the University. He must also take courses amounting to not less than fifteen hours a week and attend regularly the exercises in such courses.

RULE 4. Like other students, he must maintain satisfactory standing in his class. A student who does not maintain a satisfactory standing in one school of the University cannot, by entering another, alter his status as regards these rules.

RULE 5. He must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

RULE 6. He must pass a physical examination satisfactory to the Committee on Athletics.

SECTION II.

RULE 1. Schedules for all games must be submitted to the Committee on Athletic Sports and approved by them.

RULE 2. A similar approval is required in the case of every individual intending to represent the University of Nevada in any single contest.

MILITARY SCIENCE AND TACTICS.

1. Appreciation of the advantages of military drill and training in the education of the youth is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, while at the same time habits of obedience to lawful authority are instilled which assist materially in the development of good loyal citizens. A general knowledge of the system of national defense, of the organization of the Army and of the Navy, and their relation to the civil power, is considered essential to intelligent suffrage.

2. The department is in charge of an officer of the United States Army, detailed by the War Department as Professor of Military Science and Tactics, and who also is Commandant of Cadets.

ORGANIZATION.

3. Students receiving military instruction are designated "Cadets," and are organized into a battalion of infantry, which is officially designated as "The University of Nevada Battalion of Cadets."

4. The Battalion of Cadets is composed of all male students of the University, including those in the Preparatory, Commercial, Normal, and Special classes, with the following exceptions:

a. Students physically disqualified permanently. Those temporarily disqualified may be given light duty in the Signal Corps Detachment.

b. Students twenty-seven years of age or over.

c. Students who previously have had the military training required by the War Department.

The Band is composed of such cadets as may be selected on account of their musical qualifications. Ordinarily no

cadet will be assigned to the Band until he has satisfactorily completed the "schools of the squad, soldier, and company."

UNIFORM.

5. Cadets are required, upon entrance, to provide themselves with a uniform of prescribed design, consisting of blouse, trousers, cap, black shoes, white gloves, together with the insignia appropriate thereto.

6. Cadets will wear the uniform at all times while receiving military instruction.

7. The wearing of composite uniform is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

CADET OFFICERS.

8. Appointments in the Battalion shall be determined by

1. Military ability, which shall be decided from a careful consideration of the following points:
 - *a.* Character.
 - *b.* Attendance.
 - *c.* Military conduct.
 - *d.* Zeal.
 - *e.* Soldierly bearing.
 - *f.* Aptitude for command.
 - *g.* Knowledge of drill and other duties as determined by examination and practical application.
 - *h.* Recommendation of superior officers.
 - *i.* Standing in department of Physical Culture.
2. Class standing.
3. Length of service in the Battalion.

Generally the commissioned officers are taken from the senior class, the sergeants from the junior class, the corporals from the sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of

insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

INSTRUCTION.

10. Every cadet who is a candidate for graduation from any of the schools of the University will be required to complete the prescribed course of military instruction, aggregating 14 units credits. Other cadets will receive an amount of military training proportionate to the length of their attendance at the University.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military service, will be forwarded to the War Department and to the Adjutant-General of the State.

PUNISHMENTS.

13. The punishments to which cadets are liable, are:

a. Suspension of privileges. Private reprimand.

b. Suspension from the University. Reduction to Ranks.

c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Commandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

DISCIPLINE.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedi-

ence to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensible to discipline. Military authority will be exercised at all times, with firmness, kindness and justice; superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

GENERAL REQUIREMENTS.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to attend the prescribed military duties unless excused therefrom in advance by the President or the Commandant. In case of absence without being previously excused, a written explanation will be submitted upon resuming duty. In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION.

EXAMINATIONS AND CREDENTIALS.

1. Entrance to all of the University schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other University or College, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; and, with the exception of candidates for admission to the School of Domestic Science, must be at least twenty years of age. The Committee on Admission and Advanced Standing, in consultation with the adviser, may grant exceptions to this rule for adequate reasons. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

ACCREDITING OF SCHOOLS.

Any school in the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high school teachers and members of the Faculty concerned with accrediting will be held each year on the day preceding the Academic meet.[1]

ADMISSION REQUIREMENTS.

Subjects and Credits.

GROUP I.

1. English (a)	5 credits[2]
English (b)	5 credits
English (c)	5 credits

[1]The University pamphlet containg detailed information regarding the Accrediting of Schools will be sent to school boards, principals and teachers on request.

[2]A credit, as a measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Fifteen credits represent daily recitations throughout three years; two and one-half credits, a half year's work with daily recitations.

A total of sixty credits is required.

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EXAMINATIONS AND CREDENTIALS.

1. Entrance to all of the University schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other University or College, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; and, with the exception of candidates for admission to the School of Domestic Science, must be at least twenty years of age. The Committee on Admission and Advanced Standing, in consultation with the adviser, may grant exceptions to this rule for adequate reasons. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

ACCREDITING OF SCHOOLS.

Any school in the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

5. Latin (a)	5 credits[1]
Latin (b)	5 credits
Latin (c)	5 credits
6. Greek (a)	5 credits
Greek (b)	5 credits
7. German (a)	5 credits
German (b)	5 credits
8. French (a)	5 credits
French (b)	5 credits
9. Spanish (a)	5 credits
Spanish (b)	5 credits
10. Chemistry	5 credits
11. Physical Geography	2½ or 5 credits
12. Botany	2½ or 5 credits
13. Zoölogy	2½ or 5 credits
14. Physiology	5 credits
15. Bookkeeping	2½ credits
16. Shopwork	5 credits
17. Drawing	2½ credits

For entrance to the Engineering Schools the candidate must present subjects 1, 2, 3, and 4c*, and 20 additional credits selected from the subjects 4a, 4b, and 5 to 17, inclusive.

GROUP I admits to all schools. For entrance to the Normal School the applicant may offer ten credits in French or German, and five elective units from those named in Group II, instead of fifteen credits in Latin.

GROUP II admits to all schools except the classical course.

GROUP III admits to the Schools of Engineering.

DESCRIPTION OF ADMISSION REQUIREMENTS.

1. ENGLISH (15 credits).

The requirement in English includes both the study of the literature listed in groups I–V and the work in grammar, composition, and rhetoric outlined below.

Schools offering less than the full three years' work should divide the work as outlined (p. 53) in the course of study for the University Preparatory School.

LITERATURE.

I. Ivanhoe, Silas Marner, and the Vicar of Wakefield, or Henry Esmond; and for outside reading, any six of the following: The Talisman, The Three Musketeers, Treasure Island, The Last of the Mohicans, The Jungle Book, Quentin Durward, Rob Roy, The House of Seven Gables, The Tale of Two Cities, Lorna Doone, Emma, Oliver Twist, The Christmas Carol, Pilgrim's

[1] A credit, as the measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Fifteen credits represent daily recitations throughout three years; two and one-half credits, a half years' work with daily recitations.

A total of sixty credits is required.

Progress, With Fire and Sword, The Cloister and the Hearth, The Newcomes, Les Miserables, The Crisis, The Right of Way, The Virginian.

II. The Merchant of Venice, Julius Cæsar, Macbeth.

III. Vision of Sir Launfal, The Chambered Nautilus, Thanatopsis, Stella, The Deserted Village, The Cotter's Saturday Night, Gray's Elegy, The Ancient Mariner, L'Allegro, Il Penseroso, Lycidas, Gareth and Lynette, or The Passing of Arthur, the Princess, and any two of the following: Michael, The Rape of the Lock, Childe Harold, The Faery Queen, Chaucer's Prologue, Lays of Ancient Rome; selections from Wordsworth, Shelly, Keats, and Arnold.

IV. The Alhambra, The Great Stone Face, The Ambitious Guest, Ethan Brand, The Gold Bug, The Purloined Letter, and for outside reading any *two* of the following: Hamlin Garland's, Main Traveled Roads; Bret Harte's, The Luck of Roaring Camp; London's, The Call of the Wild; Kipling's, The Days Work; Maupassant's, The Coward; The Piece of String, The Necklace, The Book of Ruth.

V. Franklin's Autobiography, or Thoreau's Wild Apples; Addison's, Sir Roger de Coverly, or Carlyle's Essay on Burns, or Holmes' Autocrat of the Breakfast Table; Stevenson's Essays of Travel and The Art of Writing, or Burke's Speech on Conciliation, or Webster's Bunker Hill Oration.

Grammar, Composition, and Rhetoric. The aim of the course should be to train in correct expression and effective presentation of simple exercises in narration and exposition.

IV and V are intended to serve as a basis for this work. A simple text-book in rhetoric should be used. A brief review of grammar should be made in the first year, and this should be followed up in the last year by a review, covering the principles presented in Whitney's Essentials of Grammar, or MacEwan's Essentials of the English Sentence.

2. Mathematics (15 credits).

a and ½b (7½ credits) Algebra through quadratic equations. Thorough mastery of the fundamental processes of addition, subtraction, multiplication, and division. Equations of the first degree, simple and simultaneous, factoring, common divisors and multiples, fractions, fractional equations, theory of exponents, radicals, and the solution of quadratic equations.

½b and c (7½ credits) Plane Geometry. The material offered in the first five books of Beman and Smith's Plane and Solid Geometry, or its equivalent. The solution of original exercises, including applications to mensuration.

3. Physics (5 credits).

The requirement represent at least a daily exercise during one school year, which falls within the last two years of preparation for college. The course should cover the amount of material offered in any of the best modern tex-books of Elementary Physics, such as Carhart and Chute's High School Physics, or the First Course in Physics by Millikan and Gale. The instruction should be based upon laboratory work by the student, performed under the teacher's supervision, and classroom demonstration by the teacher. The student's laboratory note-book should be presented to the Department of Physics at the time of entrance.

4. HISTORY (10 credits).

(*a*) English History (2½ credits). A knowledge of the important epochs is required. Larned's History of England indicates approximately the ground to be covered. The main purpose of the requirement is to prepare for the intelligent study of English literature, therefore constant reference should be made to the literary development of the English people.

(*b*) Ancient History (2½ credits). This includes: The Beginnings of Civilization, or the early Oriental Theocracies; Greece and Macedonia; Rome to the time of Charlemagne. The amount required is indicated by West's Ancient History, or Wolfson's Essentials of Ancient History.

(*c*) American History and Civics (5 credits). A knowledge of the outline of American History, and of the nature of Federal, State and local government. The requirement represents three things: the amount of material offered in a text-book in history such as Channing, Student's History of the United States, a text-book in government such as Hinsdale's American Government, or Bryce's American Commonwealth, abr. ed., or their equivalent, and systematic reading of assigned references, which should be summarized in a note-book.

The note-book should be presented to the Department of History at the time of entrance.*

5. LATIN (5 credits).

a (5 credits). Collar and Daniell's First Latin Book, with the exception of the Colloquia, Collar's New Gradatim, and D'Ooge's Colloquia Latina, pp. 1–31, the exercises in the latter to be read only at sight, represent the nature and amount of preparation required.

b (5 credits). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1–220, with prose composition, or an equivalent.

c (5 credits). Kelsey's Selections from Ovid, and Gayley's Classic Myths. In place of all, or any part of Ovid, may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

6. GREEK (10 credits).

a. Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences into Attic Greek. White's First Greek Book represents the amount of preparation required.

b (5 credits). Xenophon's Anabasis, Books I–IV, with questions on the forms, syntax and subject-matter. The translation into Attic Greek of simple passages of connected narrative based on the Anabasis. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

7. GERMAN (10 credits).

a (5 credits). A thorough knowledge of the principles of German grammar. This includes the conjugation of weak and strong verbs, and of the

*Further particulars with reference to the note-book work will be found in the pamphlet, which may be obtained at the University Office.

modal and time auxiliaries; the declension of nouns, pronouns, articles, and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collars's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

b (5 credits). Reading and translation of the following texts or equivalents: Schiller's Maria Stuart, Modern Prose and Poetry.

The work in German composition should be continued through the second year. Harris' German Composition is recommended.

8. FRENCH (10 credits).

a (5 credits). The ability to read at sight easy French prose, to translate correctly simple English sentences into French, familiarty with all the common idioms of the language, a thorough and accurate knowledge of the principles of French grammar. Rollin's or Super's French Reader indicate the amount of material to be read. The requirements in grammar involves: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminies of adjectives, the plurals of nouns and adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite articles (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work the student may use Chardenal's Complete French Course; later Fraser and Squair's Grammar is recommended.

b (5 credits). The translation into English of the following texts or their equivalent: Le Voyage de M. Perrichon, by Labiche and Martin; About's Le Roi des Montagnes; Daudet's Le Petit Chose; de Banville's Gringoire; Meilhac and Halévy's L'Été de Saint Martin; Coppée's Le Luthier de Cremone; Le Trésor.

9. SPANISH (10 credits).

a (5 credits). For the first year in Spanish, Ramsay's, Hills and Ford's, Knapp's, or Garner's Spanish Grammar may be used. Selections from Matzke's Spanish Reader, from Knapp's, or from an equivalent text, are to be read.

b (5 credits). For the second year Galdos' Marianella, Partir a Tiempo, Electra, El Pajaro Verde, and selections from Don Quixote, or equivalent texts should be read.

10. CHEMISTRY (5 credits).

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry or Hessler and Smith's Essentials of Chemistry, and an amount of laboratory work equivalent to that outlined in the Manuals which accompany these texts should be completed. Emphasis should be

placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY (2½ or 5 credits).

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr, represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced. As a guide in this part of the work, such a laboratory Manual as Wright's would be acceptable to the University.

12. BOTANY (5 credits).

Two and one-half credits will be allowed to any high-school student who has an intelligent knowledge of Andrews' Botany All the Year Round, from page 1 to 233. (American Book Company.) $1.

For five credits the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pp. 289 to 293.

13. ZOÖLOGY (5 credits).

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's Introduction to Zoölogy (The Macmillan Company, New York), Merril's Studies in Zoölogy (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoölogy at the time of entrance.

14. PHYSIOLOGY (5 credits).

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work. A microscope and prepared slides of human or animal tissues are a necessity. Martin's Human Body (Briefer Course), Hewe's High School Physiology, or Macy and Norris' Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING (2½ credits).

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales and cash books, etc., and should include thorough understanding of checks, notes, drafts, billing, and, generally, all of the papers used in modern business.

16. SHOPWORK (5 units).

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than five units for such work.

17. DRAWING (2½ units).

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

ATTENDANCE.

EXPENSES OF STUDENTS.

TRAVELING EXPENSES.

The railways of the State are generously coöperating with the Regents of the University by giving reduced rates to students when traveling to and from their homes and the University. The Southern Pacific Company, the Virginia and Truckee, the Nevada Central, and the Eureka and Palisade Railroads will sell tickets to students at one-half the usual local rate. To obtain the benefit of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

TEXT-BOOKS.

All text-books used in the University may be purchased at any one of the bookstores in Reno at a price which covers the actual cost of purchasing and a profit to the dealer of from ten to fifteen per cent for handling.

LABORATORY FEES.

To maintain its large and valuable laboratories is a constant and heavy expense to the University. It is impossible for the Regents to provide material in these laboratories free of all expense to the students. For this reason the Regents have established a moderate charge for the material actually used by the student as follows:

For General Chemistry, per semester	$2.50
For Qualitative Chemistry, per semester	2.50
For Quantitative Chemistry, per semester	2.50
For Agricultural Chemistry, per semester	2.50
For Mineralogy, per semester	2.50
For Junior Assaying, first semester	5.00

For Junior Assaying, second semester 7.50
For Senior Metallurgy, per semester 10.00
For Typewriting, per semester 1.00
For Zoölogy 1, 3, 6, 7, each, per semester 1.00
For Botany 1, 2, 3, 4, 5, 6, each, per semester 1.00
For Zoölogy 2, 4, 20, each, per semester 2.00
For Hygiene 1 and 2, each, per semester 2.00
For Botany 20, per semester 2.00
For Sewing, per semester 1.00
For Cooking, per semester 1.00
For Shop Work, per semester 2.00
For Physics 1 (Freshman), per semester 1.00
For Physics 3 (Sophomore), per semester 2.00
For Physics 20 (each Laboratory period per week), per semester 1.00
For History Syllabus, Univereity, per semester 1.00
For History Syllabus, High School, per semester 50

DEPOSIT FOR BREAKAGE OR DAMAGE.

The following deposit fees will be required of students in the department to which the subject belongs, but will be returned to the student at the end of the semester, less the amount of breakage of or damage to material given:

For General Chemistry, per semester $5.00
For Optical Mineralogy, per semester 5.00
For Geology 4, per semester 5.00
For Mineralogy 5, per semester 5.00
For Surveying (C. E. I.), per semester 5.00
For Physics 1, per semester 5.00
For Physics 3, per semester 5.00
For Biology, one-half or more courses 2.00

ASSOCIATED STUDENTS FEE.

A fee of $4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basketball, baseball and track athletics, and debating. In return for the payment of this fee, the students receive free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

EXPENSES OF LIVING.

MANZANITA HALL is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. In regard to ventilation, heating, light, and the furnishing of the rooms, all the equipment and arrangements are of the very best kind for the health and comfort and culture of the occupants. Young ladies coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1¼ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bed spreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; one comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; 2 aprons for work in shop

and in laboratory; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

LINCOLN HALL is the college home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Richard Brown. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow slips, 20 by 30 inches; 2 white bed spreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

Rooms in private houses can be rented for $10 to $15 per month.

TABLE BOARD—For the accommodation of the students, the President of the University maintains a dining hall in commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and service has been recently reorganized with a view to securing board and table service of the most acceptable character. The price of table board for the coming year will be $16 a month, payable in advance. If the board is not paid until after the fifteenth of the month an additional charge will be made of twenty-five cents a day until the account is settled. If the bill is not paid by the last day of the month, the privileges of the dining hall will be denied until the bill has been paid. *No deviation will be made from the above regulations.* After the expenses of the dining hall have been fully met, any surplus is paid over to the Board of Regents to pay for service rendered in maintaining Manzanita and Lincoln Hall.

Table board can be obtained elsewhere at from $25 to $30 per month.

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES.

	Low.	Moderate.	Liberal.
Tuition	None	None	None
Board, 36 weeks	$144	$144	$250
Room, light, and fuel	18	18	72
Washing and sundries	20	30	40
Text-books and stationery	6	12	18
Laboratory and athletic fees	8	10	12
	$196	$214	$392

AID TO STUDENTS.

LABOR.

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work

in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework and dining hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

SCHOLARSHIPS.

A few annual scholarships have been given for the purpose of assisting deserving students. Within the past year Mr. F. M. Smith has given $1,000 to help mining students. This sum was divided into five scholarships of $200 each. A friend of the University gave two scholarships of $50 each, one to a member of the College of Arts and Science, and the other to a member of the State Normal School. He has signified his intention to give the same amount for the same purpose this year. The President's Scholarship of $100 will be given this year. The Regents will also give this year two scholarships worth $62.50 each.

All of these scholarships are given to students who in part, at least, are making their own way, and who, in point of character and industry, are deserving of aid.

A friend of the University in Carson City, Nevada, has given $150 to be used in helping to defray the expenses for the year 1907–1908 of a needy and deserving boy and girl, dividing the money between them.

F. M. Lee and R. C. Moore, Trustees of the estate of Mary R. Fairchild, have given a scholarship of $200 to a student in the Mackay School of Mines.

MATRICULATION.

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credential or examination he is given an admission card by the Registrar. This card must be presented to the Librarian before any books can be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION.

1. On registration day the student secures from the Registrar a student registration blank upon which his studies for the semester are to be entered, and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major professor as adviser, and approved by the Chairman of the Committee on Group Electives and Graduation Schedules.

4. The signature of each instructor must be obtained for the courses registered in and the card must be signed by the adviser before being deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration, stamped by the Registrar. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

STATUS OF STUDENTS.

In registering, a student shall give his status as one of four—*Regular*, *Limited*, *Partial*, or *Special*—according to the rules following:

1. For "Regular" Freshman standing, a student must be accredited in all the required Preparatory work; or his entrance deficiencies must not exceed five high-school units, and such deficiencies must be made good by the end of the Freshman year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having more than 5 and less than 11 high-school units of entrance deficiencies may register as a "Limited" Freshman, but he may be required by the Entrance Committee to register for at least half of this deficient work in the University High School. If he has 11 or more high-school units of entrance deficiencies he shall be required to register as a student in the University High School for such work, but he may be allowed to take such additional Freshman work as his course and the rules will permit.

4. A "Limited" Sophomore, Junior, or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and Departmental permission.

MAXIMUM LIMIT OF HOURS.

In general, students are recommended to follow the regular course of

study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical culture. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

ENROLLMENT.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the Adviser and the department concerned.

3. All courses finally enrolled in, whether elective or required, shall be completed as required work.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

ATTENDANCE UPON RECITATIONS AND LECTURES.

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registar's office and may subject the student to admonition, suspension, or dismissal. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time should obtain leave of absence from the President.

FINAL GRADES.

Each instructor shall determine the final grade of students by any method that he may consider best adapted to his courses.

CONDITIONS.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department

3. Only one reëxamination may be given for the removal of any condition. The regular time for such reëxamination shall be the beginning of the college year.

NOTE—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

4. Any condition not removed by the time the course is next repeated becomes a failure and is subject to the rules for failures; but in case of special students, the Committee on Registration may grant exemption from this rule.

FAILURES.

1. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the condition within the prescribed time shall be considered as having failed.

2. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Academic Council shall by vote permit an extension of time or the substitution of another course.

GRADUATION.

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school is required. Credit is given for work done in other institutions of similar rank and character.

THESIS REQUIREMENTS.

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific or literary knowledge, and good arrangement, and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the Committee on Graduation and Theses not later than the first Monday in November, and all theses should be completed and presented to this Committee on Theses on or before the first day of the final examinations in May.

The thesis should be typewritten upon 8½x11 paper and bound in a 9x11¼ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS
SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE
IN CANDIDACY FOR THE DEGREE OF
BACHELOR OF ARTS

(Department of History)

By
JOHN EDWARD SMITH
Reno, Nevada
1908

DIPLOMAS AND BACCALAUREATE DEGREES.

1. The Degree of Bachelor of Arts is conferred upon students who have completed in a satisfactory manner the four years' work of the School of Liberal Arts.

2. The Degree of Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the School of General Science, the School of Mining Engineering, the School of Mechanical Engineering, the School of Civil Engineering, or the School of Agriculture.

3. A Normal School diploma, entitling the holder to a State Teacher's Certificate of High-School Grade, is awarded to students who have completed in a satisfactory manner the four years' work of the Advanced Normal Course.

4. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded to students who have completed in a satisfactory manner the work of the Elementary Normal Course.

THE MASTER'S DEGREE.

The Master's Degree is conferred upon students who, in addition to the work required for the Bachelor's Degree, pursue a prescribed course of study of advanced character successfully for at least one academic year.

Candidates for the Master's Degree who have received their Baccalaureate Degree from the University may receive permission to do one-half of their graduate work in some other college or university of high rank.

A part of the required work is a thesis which must show capacity for independent research.

1. The Degree of Master of Arts is conferred upon the students who, in addition to the work required for the Degree of Bachelor of Arts, pursue a prescribed course of study of advanced character successfully for at least one academic year.

2. The Degree of Master of Science is conferred on students who, in addition to the work required for the Degree of Bachelor of Science, pursue a prescribed course of study of advanced character successfully for at least one academic year.

DEGREES OF MINING ENGINEER, MECHANICAL ENGINEER, AND CIVIL ENGINEER.

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer, is conferred only upon presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) One year's graduate work on subjects selected with the approval of the head of the department in which the degree is sought, or

(*b*) Three years' experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

COLLEGE OF ARTS AND SCIENCE.

FACULTY.

JOSEPH EDWARD STUBBS President
ROBERT LEWERS Vice-President, Professor of Political Economy
HENRY THURTELL Professor of Mathematics and Mechanics
JAMES EDWARD CHURCH, JR. Professor of the Latin Language and Literature
LAURA DE LAGUNA Professor of the Modern Languages
JEANNE ELIZABETH WIER Professor of History
PETER FRANDSEN Professor of Biology
PATRICK BEVERIDGE KENNEDY Professor of Botany and Horticulture
ROMANZO ADAMS Professor of Education and Sociology
ROBERT MAURO BRAMBILA Professor of Military Science and Tactics
W. S. TANGIER SMITH Professor of Geology and Mineralogy
RALPH SMITH MINOR Professor of Physics
MAXWELL ADAMS Professor of Chemistry
HERBERT WYNFORD HILL Professor of the English Language and Literature
KATE BARDENWERPER Assistant Professor of Domestic Science
KATHERINE LEWERS Assistant Professor of Drawing
SAMUEL UNSWORTH Instructor in Greek
KATHARINE RIEGELHUTH Instructor in German
JOHN JAMES VAN NOSTRAND, JR. Instructor in Latin

AIM.

The aim of the College of Arts and Science is two-fold:

1. To lay a foundation for the professions, both learned and technical, and

2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

CONDITIONS OF ADMISSION.

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students

without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING.

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

ADMISSION REQUIREMENTS.

Subjects and Credits.

GROUP I.

1.	English (a)	5 credits[1]
	English (b)	5 credits
	English (c)	5 credits
2.	Mathematics—Algebra and Plane Geometry (a)	5 credits
	Mathematics—Algebra and Plane Geometry (b)	5 credits
	Mathematics—Algebra and Plane Geometry (c)	5 credits
3.	Physics	5 credits
4.	History (a and b)	5 credits
	History (c)	5 credits
5.	Latin (a)	5 credits
	Latin (b)	5 credits
	Latin (c)	5 credits

GROUP II.

1.	English (a)	5 credits
	English (b)	5 credits
	English (c)	5 credits
2.	Mathematics—Algebra (a)	5 credits
	Mathematics—Algebra and Plane Geometry (b)	5 credits
	Mathematics—Plane Geometry (c)	5 credits
3.	Physics	5 credits
4.	History (a and b)	5 credits
	History (c)	5 credits
7-8.	German or French (a)	5 credits
	German or French (b)	5 credits
	Elective	5 credits

ELECTIVES.

5.	Latin	5 credits
10.	Chemistry	5 credits

[1] A credit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout the year, each recitation being of not less than forty minutes duration. Fifteen credits represent five recitations a week throughout three years; two and one-half credits, a half year's work; ten credits, two years' work.

11. Physical Geography 2½ or 5 credits[1]
12. Botany 2½ or 5 credits
13. Zoölogy 5 credits
14. Physiology 5 credits
15. Bookkeeping 2½ credits

GROUP I admits to both schools.

GROUP II admits to the School of General Science.

ELECTIVES: From this list may be selected any subject or subjects for the five elective units in GROUP II.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE.

The Degree of Bachelor of Arts is conferred upon students in the School of Liberal Arts, and the Degree of Bachelor of Science upon students in the School of General Science who have satisfactorily completed work aggregating 124 units credits. By an hour, or a unit credit, is meant the equivalent of work demanded by a lecture course meeting for one hour a week for one semester, or a laboratory course requiring two and one-half hours a week for one semester. The work of the first two years is in the main prescribed; that of the last two years is wholly elective, subject, however, to the rules of group and free electives. Students in the General Science course are required to take seven extra hours of Natural Science, as an equivalent of the Latin prescribed for students in the School of Liberal Arts. The work of the Freshman and Sophomore years is prescribed as follows:

SCHOOL OF LIBERAL ARTS.

FRESHMAN YEAR.

Subjects and Credits Required.		1st Sem.	2d Sem.
English 1	(5)	3	3
Latin 1		4	4
Mathematics 1 and 2	(5)	3	3
French 1, Greek 1, or German 1		4	4
History 1		2	2
Military 1 and 2, or Physical Culture		2	2

SOPHOMORE YEAR.

English 4		3	3
Latin 2 and 3		3	3
History 2		3	3
Natural Science (for choice of subjects see below)		4	4
French 2, Greek 2, or German 2 and 3		3	3
Military 1 and 2, or Physical Culture		2	2

[1] A credit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout the year, each recitation being of not less than forty minutes duration. Fifteen credits represent five recitations a week throughout three years; two and one-half credits, a half-year's work; ten credits, two years' work.

SCHOOL OF GENERAL SCIENCE.

FRESHMAN YEAR.

English 1	3	3
French 1, Greek 1, or German 1	4	4
Mathematics 1 and 2	3	3
Physics 1	2	2
Chemistry 3 and 4	4	4
Military 1 and 2, or Physical Culture	2	2

SOPHOMORE YEAR.

English 4	3	3
French 2, Greek 2, or German 2 and 3	3	3
History 2	3	3
Natural Science (for choice of subjects see below)	7	7
Military 1 and 2, or Physical Culture	2	2

While the student should as nearly as possible follow the outline of hours and subjects as here prescribed, he may, with the sanction of his adviser, defer some of his prescribed work until the Junior or Senior year.

The Natural Science prescribed for the Sophomore year shall be elected from the following courses:

Chemistry 3 and 4, Physics 2 and 3, Geology 1 and 2, Mineralogy 2 and 3, Zoölogy 1 and 8, Hygiene 1, and Botany 1. More advanced courses may be elected if the student has had the prerequisites. Students in the School of Liberal Arts intending to take a major in some science department in their Junior and Senior years should elect an elementary course in that department in the Sophomore year. Some of the above-named courses give less than the four units credits required, but the deficiency may be satisfied by the election of additional hours either in the group or free electives. All students intending to follow a science group will find it to their advantage to consult their major professor as to the best courses in science to elect in their Sophomore year.

JUNIOR AND SENIOR YEARS.

Provided all the work of the Freshman and Sophomore years has been complete as prescribed, courses aggregating 60 units credits, or an average of 15 units in each semester, should be completed during the Junior and Senior years. Of these 60 units, 40—the group electives—must be chosen within certain correlated groups and with the advice and consent of the major or major and minor departments concerned. The remaining 20 units—the free electives—may be freely elected from any courses offered in the College of Arts and Science, provided that the requirements of the departments in which the work is elected are satisfied.

GROUP ELECTIVES.

Each student in the College of Arts and Science shall, at the beginning of his Junior year, elect a department in which he wishes to do a considerable amount of work as his major department. In case any student so choose he may elect a minor department also. If a student elects a major and not a

minor department, he shall be required to elect forty hours work in the two years with the advice and approval of the head of his major department. The work of the major department shall be the correlating subject of the forty hours group electives. In case a student elects both a major and a minor department, the combined work of the two departments must represent a unity of aim, and the heads of the two departments shall constitute an advisory committee, of which the major professor shall be chairman. In this case, the elective group of forty hours must be selected with the advice and approval of the advisory committee.

Students in the School of Liberal Arts may select a major, or a major and minor, from any of the following departments: Greek, Latin, French, German, English, Spanish, History, Law, Economics, Sociology, Education, Zoölogy, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics.

Students in the School of General Science may select a major, or major and minor, from any of the following departments: Zoölogy, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics, Education.

The particular grouping will depend on the particular aim of the student. The following correlated groupings will serve as a general guide.

1	2
Language—Literature Group.	*Social Science Group.*
Greek, Latin, French, German, English.	History, Law, Economics, Sociology.
3	4
Biological Science Group.	*Physical Science Group.*
Zoölogy, Botany, Chemistry, Geology.	Chemistry, Physics, Mathematics, Geology, Mineralogy.

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to also elect a considerable amount of History. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a science major will often find it profitable to have a good reading knowledge of both French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Committee on Group Electives and Graduation Schedules, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

Each student shall make a written statement of the work he has accomplished during the Freshman and Sophomore years and of the work he proposes to do under the direction of his major or major and minor professors during his Junior and Senior years. He shall also make a statement of the coördinating aim which gives unity to the proposed group. This statement

shall be placed in the hands of the Committee on Group Electives and Graduation Schedules not later than the first week of the University year.

It shall be the duty of the Committee on Group Electives and Graduation Schedules to examine these statements carefully, and, if needs be, to interview the student presenting them and to determine whether such schedules conform to the rules governing the same. If they do thus conform they shall be approved, otherwise the discrepancy shall be pointed out and the student shall be directed again to consult with his major professor.

When any such group of electives has been approved by the Committee on Group Electives and Graduation Schedules it shall be considered as the work prescribed for graduation. Any student who shall complete the work of any such group, together with work aggregating twenty hours credit—the free electives—to be chosen freely within the prescribed groups of departments, shall be entitled to graduate. It shall be the duty of the committee to determine for each candidate for graduation whether he has completed such work. The committee shall act as a committee, the individual members having no authority outside of the committee.

FREE ELECTIVES.

Twenty hours, or an average of five hours in any one semester, may be freely elected from any of the foregoing courses offered in the College of Arts and Science, provided only that the requirements of the departments concerned are satisfied. In addition to these courses, the student may elect from subjects offered by the Department of Domestic Arts and Science in the College of Agriculture courses which may be counted toward the Degrees of B.A. or B.S., to an amount not to exceed one hour in any one semester nor four hours in all.

Each Junior student in the College of Arts and Science shall file with the Committee on Registration, not later than two days before registration, a form containing the group elective and free elective studies desired for the Junior and Senior years, with the signature of the major professor, or signatures of major and minor professors. It is advisable that students should plan their work for the Junior and Senior years as early as the beginning of the Sophomore year in order that the studies elected then may fit in with their later work.

THESES.

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED NORMAL COURSE.

Students in the College of Arts and Science may be registered in the Normal School, Advanced Course, during their Junior and Senior years by electing courses in Education and Psychology aggregating eighteen hours and Course 1 in music. Such students shall, in addition to the courses in Education and Psychology, have a group of 30, instead of 40, hours and shall freely elect 12, instead of 20, hours; but in all other respects they will be subject to the above rules as to electives.

THE MASTER'S DEGREE.

The Master's Degree is conferred upon students who, in addition to the work required for the Bachelor's Degree, pursue a prescribed course of study of advanced character successfully for at least one academic year.

Candidates who have received their Baccalaureate Degree at this University may receive permission to do one-half of their graduate work in some other college or University of high rank. A part of the required work is a thesis which must show capacity for independent research.

The Degree of Master of Arts is conferred only upon holders of the Degree of Bachelor of Arts, and the Degree of Master of Science only upon holders of the Degree of Bachelor of Science.

COURSES OF INSTRUCTION.

I.	Greek.	X.	Law.	XXV.	Domestic Science.
II.	Latin.	XI.	Economics.	XXVI.	Geology.
III.	French.	XII.	Sociology.	XXVII.	Mineralogy.
IV.	Spanish.	XIII.	Education.	XXVIII.	Chemistry.
V.	German.	XIV.	Psychology.	XXIX.	Physics.
VI.	English.	XV.	Zoölogy.	XXX.	Mathematics.
VII.	Music.	XVI.	Hygiene.	XXXVI.	Drawing.
VIII.	Art.	XVII.	Botany.	XXXVII.	Military Science and Tactics.
IX.	History.				

I. GREEK LANGUAGE AND LITERATURE.

Mr. UNSWORTH.

1. Beginning Greek. Thorough drill in the elements of the Greek language with a liberal amount of reading in Xenophon and Herodotus. *Both semesters. Hours to be arranged. Four credits.* Mr. Unsworth.

2. The Iliad or Odyssey. The reading of Homer's Iliad or Odyssey, accompanied by methodical instruction in Greek Grammar, Greek Prose Composition, and History of Ancient Greeks. *Both semesters. Hours to be arranged. Three credits.* Mr. Unsworth.

3. Lysias and Plato. A critical reading of the oration of Lysias and Plato's Apology of Socrates as a preparation for an appreciative study of Greek civilization. *First semester. Hours to be arranged. Three credits.* Mr. Unsworth.

4. Æschylus. The Prometheus Bound of Æschylus, and lectures on the orators and dramatists of Greece. *Second semester. Hours to be arranged. Three credits.* Mr. Unsworth.

5. Euripides and Sophocles. Exposition of the Greek drama. The Alcestis of Euripides and the Electra of Sophocles. *First semester. Hours to be arranged. Three credits.* Mr. Unsworth.

6. Greek Testament. Critical reading of the Gospel of St. John, with lectures on the common dialect and on Hellenistic Greek. *Second semester. Hours to be arranged. Three credits.* Mr. Unsworth.

II. LATIN LANGUAGE AND LITERATURE.

Professor CHURCH.
Mr. VAN NOSTRAND.

1. Vergil. The Æneid, Sight Reading, Literary Criticism. The critical study of the first six books of the Æneid, supplemented by a brief survey of the remainder to emphasize the unity of the poem. *Both semesters, 1-2, M. T. Th. F. 201 Morrill Hall.* Professor Church.

2. Cicero. De Senectute and De Amicitia, Private Life of the Romans. *First semester, 10-11, M, W. F. 201 Morrill Hall.* Professor Church.

3. Horace, Catullus, Tibullus. Representative Lyrics, History of Roman Literature, Prose Composition. *Second semester, 10-11, M. W. F. 201 Morrill Hall.* Professor Church.

4. Classical Pastoral Poetry. The development of pastoral poetry in Greek and Latin Literature. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

5. Classical Comedy. The elements of the comic drama in Greek and Latin literature. Aristophanes. *Prere:* Plautus, Menæchmi and Mostellaria, Terence, Phormio and Andria. *Second semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

6. Roman Satire. The times and satiric works of Lucilius, Horace, Juvenal and lesser contemporary satirists. *Not given in 1907-08.* Mr. Van Nostrand.

7. The History of the Development of the Latin Language. Roman Burial Inscriptions. *First semester. Hours to be arranged. One credit. 201 Morrill Hall.* Professor Church.

8. Prose Composition. Review of elementary composition based on Cæsar and Cicero, followed by composition based on Livy I, and other exercises independent of texts. (Especially designed for candidates for appointment to Oxford under the Rhodes Bequest.)

10. Greek and Roman Art. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

12. Classical Epic Poetry. Its development and local peculiarities. (This course is supplemented in the department of German by the study of the Nibelungenlied.) *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

13. Livy. Books XXI—XXII. *Not given in 1907-08.*

14. Tacitus, Germania and Agricola. *Not given in 1907-08.* Courses 13 and 14 alternate with courses 4 and 5, and 7.

20. Seminar for Undergraduates. *Both semesters. Hours to be arranged with individual students. One credit. Library.* Professor Church.

III. FRENCH LANGUAGE AND LITERATURE.

Professor DE LAGUNA.

1. Beginning French. Drill in grammar and in translating simple English into French, and French into English. *Both semesters, 8-9, M. T. Th. F. 104 Stewart Hall.* Professor de Laguna.

2. Second-Year French. Translation of Daudet's Selected Stories, Dumas' Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoleon, Extraits de Memoires et d'Histoires, and Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9-10 M. W. F. 104 Stewart Hall.* Professor de Laguna.

3. The French Dramatists. Selected plays of Moliére, Racine, and Corneille, Hugo's Ruy Blas, Rostand's Cyrano de Bergerac and L'Aiglon. A synopsis or critique of each play read is required. Advanced prose composition. *Not given in 1908-09. 104 Stewart Hall.* Professor de Laguna.

4. Modern French. Poetry and prose, advanced prose composition. Essays in French on the works studied are required. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. M. W. F. 104 Stewart Hall.* Professor de Laguna.

5. Rapid Reading. *Prerequisite:* 1 and 2. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

20. Seminar for Undergraduates. Old French: Grammar, phonetics, morphology, Syntax. Reading: Chanson de Roland, Chretien de Troyes, Chevalier au Lion. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

IV. SPANISH LANGUAGE AND LITERATURE.

Professor DE LAGUNA.

1. Beginning Spanish. The course in Spanish has been laid out for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from text-book work is devoted to Spanish conversation. *Elective. Prerequisites:* Two years of Latin and two of French or an equivalent. *Both semesters. Hours to be arranged. Two credits. 104 Stewart Hall.* Professor de Laguna.

2. Advanced Spanish. Modern Spanish novels and plays by standard authors. Selections from Le Sage's Gil Blas and Cervantes' Don Quixote. *Prerequisite:* Spanish 1. *Both semesters. Hours to be arranged, T. Th. Two credits. 104 Stewart Hall.* Professor de Laguna.

V. GERMAN LANGUAGE AND LITERATURE.

Professor DE LAGUNA.
Miss RIEGELHUTH.

1. Elementary German. Drill in grammar, reading of easy texts, and exercises in composition. *Both semesters, 8-9, daily. Four credits.* Miss Riegelhuth.

2. Second-Year German. Rapid reading of Leander's Traumereien, Bernhardt's Auf der Sonnenseite, and other simple stories and plays. Schiller's Maria Stuart, or Die Jungfrau von Orleans. Prose composition. *Prerequisite:* German 1 or two years of high-school German. *Both semesters, 9-10, M. W. F., 1-2, T. Three credits.* Miss Riegelhuth.

4. Goethe. Torquato Tasso and Faust, I. Two papers in German are required: a synopsis of Torquato Tasso and a characterization of Faust. History of German literature. Advanced prose composition. *Prerequisite:* German 1 and 2. *Both semesters. Hours to be arranged. M. W. F. 104 Stewart Hall.* Professor de Laguna.

5. History of German Literature. German Lyrics and German Novels of the Nineteenth Century. Critical papers in German are required. Advanced prose composition. *Prerequisites:* German 1 and 2. *Not given in 1908–09.*

20. Seminar for Undergraduates. The interpretation of the Nibelungenlied or Walther von der Vogelweide. *Both semesters. Hours to be arranged. One credit.* Professor de Laguna.

VI. ENGLISH LANGUAGE AND LITERATURE.

Professor HILL.

Professor COWGILL.

1. Composition and Rhetoric. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 9–10, Section 2, 10–11, daily. Three credits. 201 Stewart Hall.* Professor Hill and Professor Cowgill.

4. General History of English Literature. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, 8–9, M. W. F. 201 Stewart Hall.* Professor Hill.

5. Literature of the Nineteenth Century. 1—General survey of the period. 2—Tennyson and Browning. *Prerequisites:* English 1 and 4. *Both semesters, 11–12, M. T. Th. 201 Stewart Hall.* Professor Hill.

6. Shakespeare. The interpretation of six plays. *Prerequisites:* English 1 and 4. (This course alternates with 5.) *Not given 1908–09.* Professor Hill.

7. Chaucer. The Canterbury Tales. *Prerequisites:* English 1 and 4. (This course alternates with course 9.) *Not given 1908–09.* Professor Hill.

8. Milton. Minor Poems and Paradise Lost. *Prerequisites:* English 1 and 4. (This course alternates with course 9.) *Not given 1908–09.* Professor Hill.

9. Old English. 1—Grammar, and the reading of simple prose and verse. 2—Beowulf. *Prerequisites:* English 1 and 4. *Both semesters, 2–3, T. Th. F. 201 Stewart Hall.* Professor Hill.

20. Seminar for Undergraduates. *Both semesters. Hours to be arranged with individual students. One credit. Library.* Professor Hill.

VII. MUSIC.

Mrs. WOOD.

1. Vocal Music. Systematic instruction in the elements of vocal and choral music. *Both semesters. Hours to be arranged. One-half credit. 203 Morrill Hall.* Mrs. Wood.

This course may not be given in 1908–09.

VIII. ART.

Assistant Professor LEWERS.

1. Drawing. Antique life and still life. *Hours and credits to be arranged.* Assistant Professor Lewers.

2. Painting. From nature in oil and water colors. *Hours and credits to be arranged.* Assistant Professor Lewers.

3. Ornament. Historic ornament and conventionalization. *Hours and credits to be arranged.* Assistant Professor Lewers.

4. Clay Modeling. *Hours and credits to be arranged.* Assistant Professor Lewers.

For description of other courses, see Art, State Normal School.

IX. HISTORY AND POLITICAL SCIENCE.

Professor WIER.

1. Mediæval History from the Fourth to the Thirteenth Century. Beginning with the history of the Barbarian invasion the course traces the development of primitive Germanic institutions, the rise of the mediæval church and the papacy, the expansion of the Frankish Empire, and the establishment of feudalism. *Both semesters, 10–11, T. Th. 202 Morrill Hall.* Professor Wier.

2. The History of Europe from the Fourteenth to the Eighteenth Century. The formation of modern states, important features of the Renaissance, political and social development, as well as international relations, since the Peace of Westphalia. Special attention is given to the rise of Russia and Prussia, and to the change in Western Europe from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. *Both semesters, 1–2, M. W. F. 202 Morrill Hall.* Professor Wier.

3. The Constitutional and Political History of England to 1485. This course is important as a preparation for the study of law. *Prerequisite:* The character of the work will render desirable previous training in history on the part of the student. *Not given 1908–09.*

4. The Constitutional and Political History of England Since 1485. The political history is traced merely as a background for the study of the growth of the English Parliament and the Cabinet system. Comparisons are made between the existing forms of government and administration in the various countries of Europe and America. Important as a preparation for the study of law. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall.* Professor Wier.

5. The Constitutional and Political History of the United States. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Both semesters. Hours to be arranged. Three credits. 202 Morrill Hall.* Professor Wier.

9. The French Revolution. Its causes and constitutional experiments. Studied from the European and American standpoints rather than as a French local crisis. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall.* Professor Wier.

10. The History of the Pacific Slope Through the Early American Period. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall.* Professor Wier.

11. Nineteenth and Twentieth Century History. A comparative study of the main events of recent history. *Not given in 1908–09.*

20. History Seminar. *Both semesters. Hours to be arranged. One credit. 202 Morrill Hall.* Professor Wier.

X. LAW.

Professor LEWERS.
Captain BRAMBILA.

1. Elementary Law and Jurisprudence. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester, M. W. F. Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

2. International Law. The principles of International Law as seen by the leading text writers of America, England, Europe, and the Continent. *Second semester. Hours to be arranged, M. W. F. 301 Morrill Hall.* Captain Brambila.

3. Advanced Law. The object of the course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisite:* Law 1 and 2. *Both semesters, M. W. F. Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

XI. ECONOMICS.

Professor LEWERS.

1. Political Economy. The Elements of Political Economy. Recitations on the text, lectures and assigned readings. Political Economy or some equivalent. *Both semesters, 10–11, M. W. F. 301 Morrill Hall.* Professor Lewers.

2. Financial History of the United States. A detailed study of the experiences and legislation of the United States touching currency, coinage, and banking. The study will be founded, as far as possible, on examination of original sources. *Prerequisite:* 1. *Both semesters. Hours to be arranged, M. W. F. President's Office.* President Stubbs.

XII. SOCIOLOGY.

Professor ADAMS.

1. Introduction to the Study of Society. The purpose of this course is to present the social process as a unity. The demand is not so much for detailed knowledge as for a correct point of view. Society is regarded as organic and evolutionary. The fundamental social institutions and their functions are studied, and their development through savagery, barbarism, and civilization is considered. *Prerequisite:* Course 1 and 2 in History and one course in Economics. *First semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

2. Social Problems. The aim of this course is to present a number of present-day problems from the point of view of Course 1. Among the problems are the labor problem, socialism, race problems, problems of the city, problems of rural communities, crime, pauperism, sanitation, etc. Not all of these subjects will receive attention during any one semester, but the course will include a number of them selected according to the interest of the class. *Prerequisite:* Course 1. *Second semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

20. Research Course. Students choosing Sociology for a major subject will choose a thesis subject near the beginning of the Senior year, and carry on reading and research work during both semesters. Arrangements will be made in each case for consultations and reports during the year. *Hours and credits to be arranged.* Professor Adams.

The courses in Sociology may not be offered in 1908–09.

XIII. EDUCATION.

Professor ADAMS.

4. Practice Teaching. Each student taking Education 8 is required to devote four weeks to observation and teaching in the public schools of Reno under the direction of the Professor of Education and the Superintendent of Schools. *Four weeks in April.* Professor Adams.

5. Logic. *Second semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

6. Child Study. This course is designed to do two things: (1) To stimulate students to an intelligent and sympathetic observation and interpretation of the activities of children, and to acquaint them with the results of scientific investigations as to their physical and mental development; and (2) to consider the aim, matter and method of education as determined by the child's needs at each stage of development. *Second semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

7. History of Education. The aim of this course is to present education from a social point of view. Savage, barbarian, and ancient education are presented briefly by way of introduction, but chief attention is given to the modern period. In each case emphasis is placed upon the relation of the educational system to the type of social organization. Our own educational system is criticised as a product, in part, of the demands of older social conditions, and the need of readjustment to meet present demands is pointed out. *First semester, 9–10, M. T. Th. F. 101 Stewart Hall.* Professor Adams.

8. Educational Values and Methods. In this course attention is given to the more immediate problems of school work. The course of study for elementary and secondary schools is considered from the standpoint of the child as an individual and as a future American citizen. An attempt is made to point out the values of each of the subjects ordinarily studied in public schools, and to discover the methods of teaching and study that are best designed to realize these values. *Second semester, 9–10, M. T. Th. F. 101 Stewart Hall.* Professor Adams.

XIV. PSYCHOLOGY.

Professor FRANDSEN.

1. General Phychology. Lectures, reports, quizzes, and an occasional laboratory exercise. Special attention is given to the relation between the nervous and mental processes. The course is primarily intended to form a psychological basis for the advanced courses in education. *Prerequisite:* Hygiene 1 or equivalent. *Second semester. Lectures, 8–9, M. W. F. Sat. Four credits. 101 Stewart Hall.* Professor Frandsen.

XV. ZOÖLOGY.

Professor FRANDSEN.
Mr. BROWN.

1. General Zoölogy. An introduction to the whole field of zoölogy. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. 101 Stewart Hall. Laboratory, 2–4:40, M. W. Four credits. 202 Hatch Hall.* Professor Frandsen and Mr. Brown.

2. Comparative Anatomy and Physiology of Vertebrates. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoölogy or human anatomy in the high school and as a preparation for research work in anatomy. *Prerequisites:* Zoölogy 1 and Hygine 1. *Both semesters, 10–11, M. W .F. Laboratory, 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen.

3. Histology. The methods of killing, fixing, sectioning, staining, and mounting of objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisite:* Zoölogy 1 and 2, Hygiene 1. *First semester, 10–11, W. W. F. Laboratory, 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen.

4. Embryology. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick and pig at successive stages of development. *Prerequisites:* Zoölogy 1, 2 3, and Hygiene 1. *Second semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen.

Courses 3 and 4 alternate with Course 2.

8. Evolution. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon science and life in general. *Second semester. Hours to be arranged. Two credits.* Professor Frandsen.

20. Research Course. Students electing Zoölogy as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects selected from the different lines of zoölogical research, anatomy, physiology, histology and embryology will be submitted to the choice of the student. If desired a student may elect thesis work in excess

of the minimum one credit required. *Both semesters. Hours and credits to be arranged with individual student. 202 Hatch Hall.* Professor Frandsen.

For description of other courses, see Zoölogy, College of Agriculture.

XVI. HYGIENE.

Professor FRANDSEN.
Mr. BROWN.

1. Physiology and Hygiene. Special attention will be given in the second semester to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, F. Three credits. 101 Stewart Hall.* Professor Frandsen and Mr. Brown.

2. General Bacteriology. Morphology and classification of bacteria. Methods of making cultures and studying the life processes of bacteria. Fermentation, putrefaction, etc., and their importance in the economy of nature. Pathogenic bacteria. *Second semester. Hours to be arranged. Four credits. 202 Hatch Hall.* Professor Frandsen.

XVII. BOTANY.

Professor KENNEDY.
Professor FRANDSEN.
Mr. BROWN.

1. Structural and Physiological Botany. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W. 101 Stewart Hall. Laboratory, 2–4:30, M. W. Four credits. 301 Hatch Hall.* Professor Frandsen and Mr. Brown.

2. Cryptogamic Botany. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. Special attention is given to the plants in each group of economic importance. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:30, T. Th. Four credits. 202 Hatch Hall.* Professor Frandsen.

3. Comparative Histology of Plants. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. *Prerequisites:* Botany 1 and 2. *First semester. Lectures, 9–10, M. W. Laboratory, 2–4:30, T. Th. 202 Hatch Hall.* Professor Frandsen.

4. Taxonomy and Phylogeny of the Angiosperms. A study of the genetic relationship of the phanerogamous orders with practical studies in the laboratory relative to the flora of Nevada. *Prerequisite:* Botany 1 or its equivalent. *Both semesters. Hours to be arranged. Three credits. 105 Hatch Hall.* Professor Kennedy.

5. Physiological Botany. A course of experiments similar to that out-

lined in McDougal's Plant Physiology. *Prerequisites:* Botany 1, 2, and 3 *Second semester. Hours to be arranged.* Professor Frandsen.

20. Research Course. This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Prerequisites:* Botany 1, 2, 3, or 4. *Both semesters. Hours to be arranged. Two credits. 105 Hatch Hall.* Professor Kennedy.

For description of other courses, see Botany, College of Agriculture.

XXV. DOMESTIC SCIENCE.

Assistant Professor BARDENWERPER.

1a. Textiles. Hygienic and historic dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2a. Food Values. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3a. History of Cookery. Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

One credit only is given each semester for work in the Department of Domestic Science.

XXVI. GEOLOGY.

Professor SMITH.

1. Dynamic and Structural Geology. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10–11, M. W. F. Mackay Mining Building.* Professor Smith.

2. Historical Geology. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships, and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American continent. Lectures and recitations. *Prerequisite:* Geology 1. *Second semester, 10–11, M. F. Mackay Mining Building.* Professor Smith.

3. Elementary Petrology. Lectures on the classification, characters and origin of rocks. *Prerequisites:* Geology 1 and Mineralogy 4. *First semester, 1–2, M. W. Mackay Mining Building.* Professor Smith.

4. Petrographic Laboratory. The study of rocks in the hand specimens, and in thin sections with the microscope. *Prerequisites:* Mineralogy 5 and Geology 3 (the latter may be taken concurrently). *First semester, 1–4, F. One credit. Mackay Mining Building.* Professor Smith.

5. Field Geology. Instruction in field methods with actual practice in the investigation of selected areas in the vicinity of the University. The work includes the preparation of a report, with geological map and cross

sections of a specified area. Occasional trips will be taken to more distant points. Ten days of field work, commencing the second semester of the Junior year and ending the first semester of the Senior year. *Prerequisite:* Geology 1. *Both semesters, Saturdays as announced. Two credits. Mackay Mining Building.* Professor Smith.

6. Economic Geology. A study of the modes of occurrence, origin and distribution of the principal ores, non-metallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Mineralogy 3, Geology 1, 2, and 3. *Second semester, 10–11, T. W. Th. Mackay Mining Building.* Professor Smith.

7. The Nature and Origin of Soils. Lectures and outside reading. *Prerequisites:* Geology 1 and Mineralogy 1. *Second semester. Hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. Undergraduate Thesis Course. *Second semester, at least two periods a week. Two credits. Mackay Mining Building.* Professor Smith.

21. Graduate Course. Original investigation of geological problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY.

Professor SMITH.

1. Determinative Mineralogy. (*a*) The determination of the more common minerals chiefly by means of their physical properties, using such simple physical tests as are of easy application in the field. (*b*) The determination of minerals by blowpipe analysis. *Prerequisite:* Chemistry 1, 2, and 3. *Both semesters, 2–4:30, M. T. Mackay Mining Building.* Professor Smith.

2. Crystallography. Lectures, recitations and laboratory practice on the morphology of minerals. *First Semester. Lecture, 10–11. Laboratory, 2–4:30, W. Two credits. Mackay Mining Building.* Professor Smith.

3. Descriptive Mineralogy. Lectures on the classification, salient properties, and mode of occurrence of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 2, and first semester of Mineralogy 1. *Second semester, 9–10, Th. F. Mackay Mining Building.* Professor Smith.

4. Optical Properties of Minerals. Lectures *Prerequisites:* Physics 2 and 3, Mineralogy 2. *Second semester, 1–2, M. T. Mackay Mining Building.* Professor Smith.

5. Optical Properties of Minerals. Microscope study and determination of the rock-making minerals in thin section, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently). *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

6. Graduate Course. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVIII. CHEMISTRY.

Professor ADAMS.
Captain BRAMBILA.

1. General Inorganic Chemistry. Lectures and recitations on the elementary theories and fundamental principles of chemistry. *Both semesters, 1–2, T. W. Th. Two credits. 206, 101 Chemistry Building.* Professor Adams.

2. General Inorganic Chemistry. A laboratory course illustrating and verifying the fundamental laws of chemistry. *Both semesters, 2–4:30, W. Th. Two credits. 206, 102 Chemistry Building.* Professor Adams and Captain Brambila.

3. Qualitative Analysis. A laboratory course open to students who have completed Course 2. One hour each week will be devoted to explanation and discussion of the principles of analysis. *Second semester, 2–4:30, Th. Two credits. 101 Chemistry Building.* Professor Adams and Captain Brambila.

5. Quantitative Analysis. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisites:* Chemistry 1, 2, and 3. *First semester, 2–4:30, F., 8–12, Sat. Three credits. 102 Chemistry Building.* Professor Adams.

6. Advanced Quantitative Analysis. Special problems in analytical chemistry will be assigned to meet the demands of the individual student and the department in which he wishes to take his degree. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, F., 8–12, Sat. Three credits. 102 Chemistry Building.* Professor Adams.

7. Organic Chemistry. Lectures and reviews on the Chemistry of the Carbon Compounds. *Prerequisite:* Chemistry 5. *Both semesters, 10–11, T. Th. Two credits. 206 Chemistry Building.* Professor Adams.

8. Carbon Compounds. A laboratory course given in connection with Chemistry 7. *Both semesters, 2–4:30, M. T. Two credits. 102 Chemistry Building.* Professor Adams.

11. Inorganic Preparations. The preparation and purification of inorganic compounds. *Prerequisite:* Chemistry 5. *Second semester. Laboratory, 2–4:30, M. T. Two credits. 102 Chemistry Building.* Professor Adams.

12. Industrial Chemistry. Fuels. Iron and Steel. Acid and alkali manufacture. Destructive distillation. Glass. Explosives. Dye stuffs, etc. *Prerequisite:* Chemistry 5 and 7. *First semester. Lectures, 9–10, T. Th. 206 Chemistry Building.* Professor Adams.

20a. Thesis Course for Undergraduates. Laboratory and library work on special problems, to be chosen by the student in consultation with the instructor. Open to students who have completed Courses 6 and 7. *Second Semester. Hours and credits to be arranged. Chemistry Building.* Professor Adams.

XXIX. PHYSICS.

Professor MINOR.

1. General Physics. Mechanics, properties of matter, and heat. *Both semesters. Lectures, 1–2, M. F. Two credits. Laboratory, 2–4:30, F. 6 and 11 Physics Building.* Professor Minor.

2. General Physics. Sound, light, magnetism, and electricity Lectures and recitations with experimental illustrations and problems. *Prerequisite:* Physics 1. *Both semesters, 9–10, M. W. F. Three credits. 11 Physics Building.* Professor Minor.

3. Physical Measurements. Experimental work in sound, light, magnetism, and electricity of distant quantitative character. The methods selected involve fundamental physical principles, and illustrate their most important practical application. *Prerequisites:* Physics 1. *Both semesters, 2–4:30, W. Th. Two credits. 5 Physics Building.* Professor Minor.

20. Undergraduate thesis work and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Minor.

XXX. MATHEMATICS.

1a. Algebra. Special emphasis is placed upon the following subjects: ratio, proportion, variation, progressions, undetermined coefficients, the binominal theorem, logarithms, series, and the theory of equations. *First semester, 2–3, M. T. F., twelve weeks. Two credits. 107 Morrill Hall.* Professor Thurtell.

2a. Solid Geometry. The Geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester, 2–3, M. T. F., six weeks. One credit. 107 Morrill Hall.* Professor Thurtell.

3a. Plane Trigonometry. Prominence is given to the relation of functions, transformation of trigonometric expressions, and the derivation of formulas. *Second semester, 2–3, M. T. F., eight weeks. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

4. Spherical Trigonometry. The solution of all cases of spherical triangles, and the application of spherical trigonometry to elementary problems of practical astronomy. *Second semester, 2–3, M. T. F., eight weeks. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

7. Analytic Geometry. A study of the straight line, transformation of coördinates, the conic sections, the general equation of the second degree, a few higher plane curves, and an introduction to analytic geometry of three dimensions. *Second semester, 8–9, daily. 107 Morrill Hall.* Professor Thurtell.

8. Differential Calculus. A thorough study of the fundamental principles of the differential calculus, followed by their application to expansion in series, tangents and normals, contact and curvature, indeterminate forms, maxima and minima. *First semester, 10–11, daily. 107 Morrill Hall.* Professor Thurtell.

9. Integral Calculus. Summation, rectification of curves, areas of plane curves, areas of surfaces of revolution, volumes of solids of revolution, volumes of other solids, moments of inertia. *Second semester, 9–10, daily. 107 Morrill Hall.* Professor Thurtell.

10. Analytic Mechanics. The development of the essential principles of

mechanics followed by exercises in solving practical problems. *Both semesters, 9–10, T. W. Th. 107 Morrill Hall.* Professor Thurtell.

For description of other courses, see mathematics, College of Engineering.

XXXVII. MILITARY SCIENCE AND TACTICS.

Captain BRAMBILA.

1. Drill. Squad, company and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.* Eight semesters, 11–12, M. T. Th. F. One credit.* Captain Brambila.

2. Regulations. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.* Four semesters, 11–12, W. One credit.* Cadet Officers.

3. Duties of Company Officers. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.* Four semesters, 11–12, W. One-half credit.* Captain Brambila.

*For exceptions, see Organization of Battalion of Cadets, page 47.

COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE
2. SCHOOL OF DOMESTIC SCIENCE*

*The School of Domestic Science is as yet only partially organized, a complete organization awaiting the accumulation of a sufficient reserve being made for this purpose.

COLLEGE OF AGRICULTURE AND DOMESTIC SCIENCE.

FACULTY.

JOSEPH EDWARD STUBBS President
NATHANIEL ESTES WILSON Professor of Agricultural Chemistry
HENRY THURTELL Professor of Mathematics and Mechanics
PETER FRANDSEN Professor of Biology
PATRICK BEVERIDGE KENNEDY Professor of Botany, Horticulture, Forestry
SAMUEL BRADFORD DOTEN Professor of Entomology
GORDON HAINES TRUE Professor of Agriculture and Animal Husbandry
ROBERT MAURO BRAMBILA Professor of Military Science and Tactics
W. S. TANGIER SMITH Professor of Geology and Mineralogy
RALPH SMITH MINOR Professor of Physics
MAXWELL ADAMS Professor of Chemistry
WINFRED BURDELL MACK Professor of Veterinary Science and Bacteriology
HERBERT WINFORD HILL Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN Professor of Civil Engineering
KATE BARDENWERPER Assistant Professor of Domestic Science
SANFORD CROSBY DINSMORE Assistant Professor of Agricultural Chemistry
ACHILLES CALLOWAY GOUGH Instructor in Mechanical Engineering
CHARLES LE ROY BROWN Assistant in Biology

AIM.

The aim of the School of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operations of farming, gardening, and stock raising, but also to give such training in English, mathematics, and the sciences as will furnish a well-rounded education.

EQUIPMENT.

The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, and where representatives of different breeds of pure-bred farm animals are available for class work, furnishes a valuable equipment for the study of those subjects directly related to practical agriculture.

CONDITIONS OF ADMISSION.

SCHOOL OF AGRICULTURE.

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from the accredited school or not. The examination will be held in September of each year.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQIREMENTS.

Subjects and Credits.

1.	English (a)	5 credits[1]
	English (b)	5 credits
	English (c)	5 credits
2.	Mathematics—Algebra (a)	5 credits
	Mathematics—Algebra and Plane Geometry (b)	5 credits
	Mathematics—Plane Geometry (c)	5 credits
3.	Physics	5 credits
4.	History (a and b)	5 credits
	History (c)	5 credits
7-8.	German, or French (a)	5 credits
	German, or French (b)	5 credits
	Elective	5 credits

ELECTIVES.

5.	Latin	5 credits
10.	Chemistry	5 credits
11.	Physical Geography	2½ or 5 credits
12.	Botany	2½ or 5 credits
13.	Zoölogy	5 credits
14.	Physiology	5 credits
15.	Bookkeeping	2½ credits

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing in consultation with the adviser may make exceptions to this rule.

[1] A credit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout the year, each recitation being of not less than forty minutes duration. Fifteen credits represent five recitations a week throughout three years; two and one-half credits, a half year's work; ten credits, two years' work.

ADVANCED STANDING.

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

REQUIREMENTS FOR A DEGREE.

The Degree of Bachelor of Science in Agriculture is conferred upon students who have satisfactorily completed the full course of study in the School of Agriculture as given below. The term credit denotes the amount of work required by a lecture course meeting one hour a week for one semester, or a laboratory course requiring two and one-half hours a week during one semester.

COURSE OF STUDY.

COLLEGE OF AGRICULTURE.

FRESHMAN YEAR.

Subjects and Credits Required.	1st Sem.	2d Sem.
English 1	3	3
Mathematics 3, 4, 5, and 7	5	5
Hygiene 1 (Physiology)	3	3
Botany 1		4
Animal Husbandry 1	5	
Mechanic Arts 1		2
Military 1 and 2	2	2

SOPHOMORE YEAR.

English 4	3	3
Horticulture 1		4
Agriculture 1		4
Botany 2	4	
Entomology 1	4	
Chemistry 1 and 2	5	5
Military 1 and 2	2	2

JUNIOR YEAR.

Horticulture 3, or Animal Husbandry 2 (Plant Breeding or Animal Breeding and Feeding)	5	
Chemistry 9 and 10 (Agricultural Chemistry)	4	4
Civil Engineering 1 (Surveying)	4	4
Geology 1 and 2	3	4
Geology 7 (Origin of Soils)		3
Mineralogy 1	2	
Veterinary Science		5
Military 1 and 3	1½	1½

SENIOR YEAR.

Agriculture 2 (Irrigation)	4	4
Thesis	3	3
Elective (two courses selected from following list)	10	10
Military 1 and 3	1½	1½

ELECTIVES.

Chemistry 20	5	5
Horticulture 2 (Pomology)	5	5
Botany 6 (Economic Botany)	5	5
Forestry	5	5
Animal Husbandry 4 { Selection of Breeding Stock	5	
Animal Husbandry 4 { Feeding of Animals		5
Agriculture 3 (Farm Management)	5	5
Dairying 1	5	5
Horticulture 3 (Evolution of Cultivated Plants)	5	5

COURSES OF INSTRUCTION.

VI. English.	XXI. Animal Husbandry.	XXVIII. Chemistry.
XV. Zoölogy.	XXII. Veterinary Science.	XXX. Mathematics.
XVI. Hygiene.	XXIII. Dairying.	XXXIV. Mechanic Arts
XVII. Botany.	XXIV. Entomology.	XXXV. Civil Engineering.
XVIII. Horticulture.	XXV. Domestic Science.	
XIX. Forestry.	XXVI. Geology.	XXXVIII. Military Science and Tactics.
XX. Agriculture.	XXVII. Mineralogy.	

VI. ENGLISH LANGUAGE AND LITERATURE.

Professor HILL.

Professor COWGILL.

1. **Composition and Rhetoric.** The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 9–10, Section 2, 10–11, daily. Three credits. 201 Stewart Hall.* Professor Hill and Professor Cowgill.

4. **General History of English Literature.** A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite: English 1. Both semesters, M. W. F. 201 Stewart Hall.* Prosessor Hill.

XVI. HYGIENE.

Professor FRANDSEN.

Mr. BROWN.

1. **Physiology and Hygiene.** Special attention will be given in the second semester to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. 301 Hatch Hall. Laboratory, 2–4:30, F. Three credits. 101 Stewart Hall.* Professor Frandsen and Mr. Brown.

For description of other courses, see Hygiene, College of Arts and Science.

XVII. BOTANY.

Professor KENNEDY.
Professor FRANDSEN.
Mr. BROWN.

1. **Structural and Physiological Botany.** A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester. Lectures, 8–9, T. Th. 301 Hatch Hall. Laboratory, 2–4:30, M. W. Four credits. 101 Stewart Hall.* Professor Frandsen and Mr. Brown.

2. **Cryptogamic Botany.** Lectures and Laboratory. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers and flowering plants. Special attention is given to the plants in each group of economic importance. Illustrated by lantern slides. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:30, T. Th. Four credits. 202 Hatch Hall.* Professor Frandsen.

6. **Economic Botany.** The nature and treatment of pathological and physiological diseases of plants, weeds, poisonous plants, grasses and forage plants. *Prerequisite:* Botany 1 and 2. *First semester. Hours to be arranged. Five credits. 105 Hatch Hall.* Professor Kennedy.

For description of other courses, see Botany, College of Arts and Science.

XVIII. HORTICULTURE.

Professor KENNEDY.

1. **General Horticulture.** Fruit growing, vegetable gardening, the propagation of plants, the making of lawns, ornamental shrubs, and the beautifying of home and farm grounds. Practical work in the care of plants, grafting, budding, making cuttings, pollination, and pruning. *Second semester. Hours to be arranged. Four credits. 105 Hatch Hall.* Professor Kennedy.

2. **Pomology.** The cultivation of fruits, with especial reference to the marketing, storing and adaptability of varieties for cultivation in Nevada. *Both semesters. Hours to be arranged. Five credits. 105 Hatch Hall.* Professor Kennedy.

3. **The Evolution of Cultivated Plants.** The discussion of organic evolution as applied to the modification of plants, particularly those in cultivation. *Prerequisite:* Botany 1 and 2. *Both semesters. Hours to be arranged. Five credits. 105 Hatch Hall.* Professor Kennedy.

XIX. FORESTRY.

Professor KENNEDY.

1. **Elementary Forestry.** The effects of deforestation on the water supply, forest protection and regeneration; the use and durability of the different woods, and forest economics. *Prerequisite:* Botany 1. *Both semesters. Hours to be arranged. 105 Hatch Hall.* Professor Kennedy.

XX. AGRICULTURE.

Professor TRUE.
Professor BOARDMAN.

1. Soils and Crops. *Second semester. Hours to be arranged. Four credits. 101 Hatch Hall.* Professor True.

2. Irrigation. *First semester.* A brief review of the history of irrigation, the development of irrigation laws, and the doctrine of appropriation. The study of rainfall, evaporation, and seepage; the character of irrigating waters, methods of applying water to land, the effect of irrigation upon alkali in the soil, the measurement of water upon the farm, and the duty of water. *Hours to be arranged. 101 Hatch Hall.* Professor True.

Second semester. Irrigation Engineering. *Hours to be arranged.* Professor Boardman.

3. Farm Management. *Both semesters. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

XXI. ANIMAL HUSBANDRY.

Professor TRUE.

1. Breeds of Live Stock. The study of the history and characteristics of the pure breeds of farm animals, illustrated by lantern slides showing photographic reproductions of typical animals. In conjunction with this work in the class room, practical work will be given in judging animals representative of the different types and breeds. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

2. The Breeding and Feeding of Live Stock. Breeding: The discussion of the laws and principles relating to the breeding of animals, and their application to breeding operations; the value of pedigrees, and the care of breeding stock on the farm. Feeding: The discussion of the source of food, the laws of nutrition, the value of various feeding stuffs as indicated by their composition and digestibility; the theory of balanced rations and the practice of feeding. *Second semester. Hours to be arranged. Four credits. 101 Hatch Hall.* Professor True.

4. The Selection and Feeding of Breeding Stock, and Stock Judging. Research course designed for students intending to follow animal husbandry as a business. *Both semesters. Hours to be arranged. Five credits. 101 Hatch Hall, and Station Farm.* Professor True.

XXII. VETERINARY SCIENCE.

Professor MACK.

1. Veterinary Science. This course is designed to give the student some familiarity with the more common ailments of domesticated animals, and such knowledge of the nature of disease as to enable him to maintain sanitary conditions, and to intelligently combat infection. *Second semester. Hours to be arranged. Daily. 202 Hatch Hall.* Professor Mack.

XXIII. DAIRYING.

Assistant Professor DINSMORE.

1. Theory and Practice of Dairying. Lectures upon the formation and composition of milk; ferments and their action; testing for purity and value; methods of manufacture of cheese and butter. The lectures are supplemented by practical work with different testing apparatus, and by the inspection of dairies and creameries fitted with modern apparatus. *Both semesters. Hours to be arranged. Five credits. 207 Hatch Hall.* Assistant Professor Dinsmore.

XXIV. ENTOMOLOGY.

Professor DOTEN.

1. Economic Entomology. Lectures with field work on destructive insect pests. Discussion of their life histories, and the best means of combating them. *First semester. Hours to be arranged. Four credits.* Professor Doten.

XXV. DOMESTIC SCIENCE.

Assistant Professor BARDENWERPER.

1b. Textiles. The history and the hygiene of dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2b. Food Values. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3b. History of Cookery. Food adulterations. Dietetic errors. Invalid cookery. Chafing-dish course. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

XXVI. GEOLOGY.

Professor SMITH.

1. Dynamic and Structural Geology. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10–11, M. W. F. Mackay Mining Building.* Professor Smith.

2. Historical Geology. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships, and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American continent. *Prerequisite:* Geology 1. *Second semester, 10–11, M. F. Mackay Mining Building.* Professor Smith.

7. The Nature and Origin of Soils. Lectures and outside reading. *Prerequisites:* Geology 1 and Mineralogy 1. *Second semester. Hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

For description of other courses, see Geology, College of Arts and Science.

XXVII. MINERALOGY.

Professor SMITH.

1. Determinative Mineralogy. (*a*) The determination of the more common minerals, chiefly by means of their physical properties, using such simple physical tests as are of easy application in the field. (*b*) The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 1, 2, and 3. *Both semesters, 2–4:30, M. T. Mackay Mining Building.* Professor Smith.

For description of other courses, see Mineralogy, College of Arts and Science.

XXVIII. CHEMISTRY.

Professor ADAMS.
Assistant Professor DINSMORE.
Captain BRAMBILA.

1. General Inorganic Chemistry. Lectures and recitations on the elementary theories and principles of chemistry. *Both semesters. Lectures, 1–2, T. Th. 206, 101 Chemistry Building.* Professor Adams.

2. General Inorganic Chemistry. A laboratory course illustrating and verifying the fundamental laws of Chemistry. *First semester. Laboratory, 2–4:30, W. T. Two credits. 101 Chemistry Building.* Professor Adams and Captain Brambila.

3. Qualitative Analysis. *Prerequisites:* First half of 1 and all of 2. *Second semester. Laboratory, 2–4:30, W. Th. Two credits. 101 Chemistry Building.* Professor Adams and Captain Brambila.

5. Quantitative Analysis. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisite:* 3. *First semester. Laboratory, 2–4:30, F. 8–12, Sat. Two credits. 102 Chemistry Building.* Professor Adams.

9. Agricultural Chemistry. A lecture course on the application of chemical principles to farm economy. The relation of the plant to the soil and air; sources of plant food; forage plants and the value of various stock foods. Soils—their origin, formation, composition, deterioration and improvement. *Prerequisite:* 5. *Both semesters, 9–10, M. W. 206 Chemistry Building.* Assistant Professor Dinsmore.

10. Agricultural Chemical Analysis. A course given in connection with 9. This course includes the analysis of farm and dairy products, soils, fertilizers and irrigation waters. *Both semesters. Laboratory, 2–4:30, T. W. Two credits. 208 Chemistry Building.* Professor Adams and Assistant Professor Dinsmore.

20b. Thesis Course for Undergraduates. Laboratory and library work on special problems, to be chosen by the student in consultation with the instructor. *Both semesters. Hours to be arranged. Five credits. Chemistry Building.* Professor Adams.

For description of other courses, see Chemistry, College of Arts and Science.

XXX. MATHEMATICS.

1a. Algebra. Special emphasis is placed on the following subjects ratio, proportion, variation, progressions, undetermined coefficients, the binomial theorem, logarithms, series, and the theory of equations. *First semester, 2–3, M. T. F., twelve weeks. Two credits. 107 Morrill Hall.* Professor Thurtell.

2a. Solid Geometry. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester, 2–3, M. T. F., six weeks. One credit. 107 Morrill Hall.* Professor Thurtell.

3a. Plane Trigonometry. This course covers the subject as presented in such texts as Wells, Wentworth, Murray, and Crockett. Prominence is given to the relation of functions, transformation of trigonometric expressions and the derivation of formulas. *Second semester, M. T. F., eight weeks. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

4. Spherical Trigonometry. The solution of all classes of spherical triangles and the application of spherical trigonometry to elementary problems of practical astronomy. *Second semester, 2–3, M. T. F. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

For description of other courses, see Mathematics, College of Arts and Science, and College of Engineering.

XXXIV. MECHANIC ARTS.

Mr. Gough.

Mr. Clingman.

1. Bench Work and Wood Turning. *Both semesters. Hours to be arranged. Two credits. 201 Mechanical Building.* Mr. Gough and Mr. Clingman.

For description of other courses, see Mechanic Arts, College of Engineering.

XXXV. CIVIL ENGINEERING.

Professor Boardman.

1. Surveying. The use and adjustments of the various kinds of instruments commonly used in surveying. Instruction is given in class room, field, and drafting room in land surveying, topographic, hydrographic, mining and city surveying. *Both semesters. Recitations or lectures, 1–2. Field or Drafting, 2–4:30, Th. F. Four credits.* Professor Boardman.

XXXVII. MILITARY SCIENCE AND TACTICS.

Captain Brambila.

1. Drill. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.* Eight semesters, 11–12, M. T. Th. F. One credit.* Captain Brambila.

2. Regulations. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores* Four semesters, 11–12, W. One credit.* Cadet Officers.

*For exceptions, see Organization of Battalion of Cadets, page 47.

3. Duties of Company Officers. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.* Four semesters, 11–12, W. One-half credit.* Captain Brambilla.

*For exceptions, see Organization of Battalion of Cadets, page 47.

COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

COLLEGE OF ENGINEERING.

FACULTY.

JOSEPH EDWARD STUBBS President
HENRY THURTELL Professor of Mathematics and Mechanics
GEORGE J. YOUNG Professor of Mining and Metallurgy
JAMES GRAVES SCRUGHAM Professor of Mechanical Engineering
ROBERT MAURO BRAMBILA Professor of Military Science and Tactics
WILLIAM SIDNEY TANGIER SMITH Professor of Geology and Mineralogy
RALPH SMITH MINOR Professor of Physics
MAXWELL ADAMS Professor of Chemistry
HERBERT WYNFORD HILL Professor of English Language and Literature
HORACE PRENTISS BOARDMAN Professor of Civil Engineering
KATHERINE LEWERS Assistant Professor of Art
ACHILLES CALLOWAY GOUGH Instructor in Mechanical Engineering
MILES BRYCE KENNEDY Assistant in Metallurgy
EARL NEWTON CLINGMAN Assistant in Mechanical Engineering

AIM.

The aim of the College of Engineering is to equip the young men who wish to share actively in the industrial development of the State and the Nation with such knowledge of mining, mechanical and civil engineering as is essential for entrance into these professions.

EQUIPMENT.

In a College of Engineering the material equipment is of great importance and the University has made a special effort to properly provide the necessary laboratories, workshops, etc. For a general description of these see under the titles Mackay Mining Building, Mechanical Building, Chemistry Building, Laboratories for Geology and Mineralogy, Laboratories of the Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

CONDITION OF ADMISSION.

1. Entrance to the Engineering Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work done here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the university must pass an examination in English Composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS.

SUBJECTS AND CREDITS.

1.	English (a)	5 credits[1]
	English (b)	5 credits
	English (c)	5 credits
[2]2.	Mathematics—Algebra (a)	5 credits
	Mathematics—Algebra and Plane Geometry (b)	5 credits
	Mathematics—Plane Geometry (c)	5 credits
3.	Physics	5 credits
4.	English History (a)	2½ credits
	Ancient History (b)	2½ credits
	American History and Civics (c)	5 credits
5.	Latin (a)	5 credits
	Latin (b)	5 credits
	Latin (c)	5 credits
6.	Greek (a)	5 credits
	Greek (b)	5 credits
7.	German (a)	5 credits
	German (b)	5 credits
8.	French (a)	5 credits
	French (b)	5 credits
9.	Spanish (a)	5 credits
	Spanish (b)	5 credits
10.	Chemistry	5 credits
11.	Physical Geography	2½ credits
12.	Botany	2½ or 5 credits
13.	Zoölogy	2½ or 5 credits
14.	Physiology	5 credits
15.	Bookkeeping	2½ credits
16.	Shopwork	5 credits
17.	Drawing	2½ credits

For entrance to the Engineering Schools the candidate must present subjects 1, 2, 3, and 4c, and 20 additional credits selected from the subjects 4a, 4b and 5 to 17 inclusive.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and

[1]A credit, as a measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than thirty-five minutes duration. Fifteen credits represent five recitations a week throughout three years; two and one-half credits, a half year's work; ten credits, two years' work.

[2]Beginning with September, 1910, Solid Geometry will be included in the entrance requirements.

Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING.

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the department concerned.

REQUIREMENTS FOR A DEGREE.

THE BACCALAUREATE DEGREE.

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical Engineering, upon students who have satisfactorily completed the full conrse of study in the School of Mechanical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

REQUIREMENTS FOR DEGREES OF MINING ENGINEER, MECHANICAL ENGINEER AND CIVIL ENGINEER.

Presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) One year's post-graduate work on subjects selected with the approval of the head of the department in which the degree is sought, or

(*b*) Three years' experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

COLLEGE OF ENGINEERING.

COURSE OF STUDY.

FRESHMAN YEAR—ALL SCHOOLS.

First Semester.		*Second Semester.*	
Mathematics 3 and 4	5	Mathematics 5 and 7	5
English 1	5	English 1	5
Drawing 1 and 2	2	Drawing 1 and 2	2
Mechanic Arts 1	2 Lab.	Mechanic Arts 1	2 Lab.
Chemistry 1	2	Mechanic Arts 2	2 Lab.
Chemistry 2	2 Lab.	Chemistry 1	2
Physics 1	1 and 1 Lab.	Chemistry 3	2 Lab.
Drill 1 and 2	2	Physics	1 and 1 Lab.
		Drill 1 and 2	2

SCHOOL OF MINES.

First Semester.	SOPHOMORE.	*Second Semester.*	
Mathematics 8 and 9	5	Mathematics 8 and 9	5
Chemistry 5	3 Lab.	Chemistry 6	3 Lab.
Physics 2	3	Physics 2	3
Physics 3	2 Lab.	Physics 3	2 Lab.
Mineralogy 1	2 Lab.	Mineralogy 1	2 Lab.
Drawing 3	2	Drawing 4	2
M. E. 1	2	M. E. 1	2
Drill 1 and 2	2	Drill 1 and 2	2

JUNIOR.

Mining 7 2	Mining 7 2
Mining 11 and 12 2	Mining 11 and 12 3
Mineralogy 2 and 3 2	Mineralogy 2 and 3 2
Geology 1 3	Geology 2 2
Mathematics 10 and 11 5	Mathematics 10 3
Civil Engineering 9 2 and 1 Lab.	Mineralogy 5 and 6 3
Civil Engineering 1 2 and 2 Lab.	Civil Engineering 1 2 and 2 Lab.
Mining 4 2 Lab.	Geology 5, Field work 1 Lab.
Drill 1 and 3 1½	Drill 1 and 3 1½

SENIOR.

Mining 1 4	Mining 2 4
Mining 3 1	Mining 3 1
Mining 8 4	Mining 5 Field work
Geology 5 1 Lab.	Mining 6 1
Mining 10 2	Mining 9 4
Geology 3 and 4 3	Mining 10 2
Civil Engineering 8 3	Geology 6 3
Drill 1 and 3 1½	Thesis 2
	Drill 1 and 3 1½

SCHOOL OF MECHANICAL ENGINEERING.

SOPHOMORE.

First Semester.	*Second Semester.*
Mathematics 8 and 9 5	Mathematics 8 and 9 5
Drawing 3 2	M. E. 2 2
Physics 2 3	Drawing 4 2
Physics 3 2 Lab.	Physics 2 3
Mechanic Arts 2 Lab.	Physics 3 2 Lab.
Mechanical Engineering 1 2	Mechanic Arts 3 2 Lab.
Chemistry 5 3 Lab.	Mechanical Engineering 1 2
Drill 1 and 2 2	Drill 1 and 2 2

JUNIOR.

Mathematics 10 and 11 5	Mathematics 10 3
Civil Engineering 9 2 and 1 Lab.	Mechanical Engineering 3 2
Mining 7 2	Electrical Engineering 2 3
Electrical Engineering 1 3	Mechanical Engineering 4 2
Drawing 5 3 Lab.	Drawing 6 3 Lab.
Civil Engineering 1 2 and 2 Lab.	Civil Engineering 1 2 and 2 Lab.
Drill 1 and 3 1½	Drill 1 and 3 1½

SENIOR.

Electrical Engineering 3 3	Electrical Engineering 4 2
Mechanical Engineering 5 4	Electrical Engineering 5 2
Civil Engineering 5 4	Mechanical Engineering 6 3
Drawing 7 3	Mechanical Engineering 7 1
Civil Engineering 8 3	Drawing 7 3
Mechanical Engineering 10 2	Mechanical Engineering 8 2
Drill 1 and 3 1½	Mining 6 1
	Thesis 2
	Elective 3
	Drill 1 and 3 1½

SCHOOL OF CIVIL ENGINEERING.

First Semester.		SOPHOMORE.	*Second Semester.*	
Mathematics 8 and 9	5		Mathematics 8 and 9	5
Drawing 3	2		Drawing 3	1
Chemistry 5	3 Lab.		Drawing 4	2
Physics 2	3		Physics 2	3
Physics 3	2 Lab.		Physics 3	2 Lab.
Mineralogy 1	2 Lab.		Mineralogy 1	2 Lab.
M. E. 1	2		M. E. 1	2
Drill 1 and 2	2		Drill 1 and 2	2
		JUNIOR.		
Mathematics 10 and 11	5		Mathematics 10	3
Civil Engineering 1	2 and 2 Lab.		Civil Engineering 1	2 and 2 Lab.
Civil Engineering 9	2 and 1 Lab.		Civil Engineering 2	2
Geology 1	3		Geology 2	2
Mineralogy 2	2		Civil Engineering 6	3
Mining 7	2		Mining 7	2
Drill 1 and 3	1½		M. E. 3	2
			Geology 5	Field work
			Drill 1 and 3	1½
		SENIOR.		
Mining 1	4		Civil Engineering 11	2
Civil Engineering 3	5		Mining 6	1
Civil Engineering 5	5		Civil Engineering 4	5
Civil Engineering 8	3		Civil Engineering 7	3
Drill 1 and 3	1½		Civil Engineering 10	2
			Elective	3
			Thesis	2
			Drill 1 and 3	1½

COURSES OF INSTRUCTION.

VI. English. XXX. Mathematics. XXXV. Civil
XXVI. Geology. XXXI. Mining. Engineering.
XXVII. Mineralogy. XXXII. Mech. Engineering. XXXVI. Drawing.
XXVIII. Chemistry. XXXIII. Elec. Engineering. XXXVII. Military Science
XXIX. Physics. XXXIV. Mechanic Arts. and Tactics.

ENGLISH LANGUAGE AND LITERATURE.

Professor HILL.
Professor COWGILL.

1. **Composition and Rhetoric.** The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, Section 1, 9–10, Section 2, 10–11, daily. Three credits. 5 Stewart Hall.* Professor Hill and Professor Cowgill.

For description of other courses, see English, College of Arts and Science.

NOTE—Credits are reckoned on the semester basis. When not otherwise specified, the credits are equivalent to the number of recitations per week.

XXVI. GEOLOGY.

Professor SMITH.

1. Dynamic and Structural Geology. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10–11, M. W. F. Mackay Mining Building.* Professor Smith.

2. Historical Geology. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American continent. Lectures and recitations. *Prerequisite:* Geology 1. *Second semester, 10–11, M. F. Mackay Mining Building.* Professor Smith.

3. Elementary Petrology. Lectures on the classification, characters and origin of rocks. *Prerequisite:* Geology 1 and Mineralogy 4. *First semester, 1–2, M. W. Mackay Mining Building.* Professor Smith.

4. Petrographic Laboratory. The study of rocks in the hand specimen and in thin sections with the microscope. *Prerequisites:* Mineralogy 5 and Geology 3 (the latter may be taken concurrently). *First semester, 1–4, F. One credit. Mackay Mining Building.* Professor Smith.

5. Field Geology. Instruction in field methods with actual practice in the investigation of selected areas in the vicinity of the University. The work includes the preparation of a report, with geological map and cross sections of a specified area. Occasional trips will be taken to more distant points. Ten days of field work commencing the second semester of the Junior year and ending the first semester of the Senior year. *Prerequisite:* Geology 1. *Both semesters. Saturdays as announced. Two credits. Mackay Mining Building.* Professor Smith.

6. Economic Geology. A study of the modes of occurrence, origin and distribution of the principal ores, non-metallic minerals and rocks used in the arts of industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Mineralogy 3, Geology 1, 2 and 3. *Second Semester, 10–11, T. W. Th. Mackay Mining Building.* Professor Smith.

7. The Nature and Origin of Soils. Lectures and outside reading. *Prerequisites:* Geology 1 and Mineralogy 1. *Second semester. Hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. Undergraduate Thesis Course. *Second semester. Hours to be arranged. Two credits. Mackay Mining Building.* Professor Smith.

21. Graduate Course. Original investigation of geological problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY.

Professor SMITH.

1. Determinative Mineralogy. (*a*) The determination of the more common minerals chiefly by means of their physical properties, using such simple physical tests as are of easy application in the field. (*b*) The determi-

nation of minerals by blowpipe analysis. *Prerequisite:* Chemistry 1, 2, and 3. *Both semesters, 2–4:20, M. T. Mackay Mining Building.* Professor Smith.

2. Crystallography. Lectures, recitations and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11. Laboratory, 2–4:30, W. Mackay Mining Building.* Professor Smith.

3. Descriptive Mineralogy. Lectures on the classification, salient properties and mode of occurrence of the more important minerals, illustrated by typical specimens. *Prerequisites:* Mineralogy 2 and first semester of Mineralogy 1. *Second semester, 9–10, Th. F. Mackay Mining Building.* Professor Smith.

4. Optical Properties of Minerals. Lectures. *Prerequisites:* Physics 2 and 3, Mineralogy 2. *Second semester, 1–2, M. T. Mackay Mining Building.* Professor Smith.

5. Optical Properties of Minerals. Microscope study and determination of the rock-making minerals in thin section, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently.) *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

6. Graduate Course. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVIII. CHEMISTRY.

Professor ADAMS.
Captain BRAMBILA.

1. General Inorganic Chemistry. Lectures and recitations on the elementary theories and principles of chemistry. *Both semesters. Lectures, 1–2, T. Th. 206, 101 Chemistry Building.* Professor Adams.

2. General Inorganic Chemistry. A laboratory course illustrating and verifying the fundamental laws of chemistry. *First semester. Laboratory, 2–4:30, W. Th. Two credits. 101 Chemistry Building.* Professor Adams and Captain Brambila.

3. Qualitative Analysis. *Prerequisites:* First half of Chemistry 1 and all of Chemistry 2. *Second semester. Laboratory, 2–4:30, W. Th. Two credits. 101 Chemistry Building.* Professor Adams and Captain Brambila.

5. Quantitative Analysis. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisite:* Chemistry 3. *First semester. Laboratory, 2–4:30, F., 8–12, Sat. Two credits. 102 Chemistry Building.* Professor Adams.

6. Advanced Quantitative Analysis. Special problems in analytical chemistry will be assigned to meet the demands of the individual student and the department in which he wishes to take his degree. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, F., 8–12, Sat. Three credits. 102 Chemistry Building.* Professor Adams.

For description of other courses, see Chemistry, College of Arts and Science and College of Agriculture.

XXIX. PHYSICS.

Professor MINOR.

1. General Physics. Mechanics, properties of matter and heat. *Both semesters. Lectures, 1–2, M. F. Two credits. Laboratory, 2–4:30, F. 6 and 11 Physics Building.* Professor Minor.

2. General Physics. Lectures and recitations with experimental illustrations and problems. Sound, light, magnetism and electricity. *Prerequisite:* Physics 1. *Both semesters, 9–10, M. W. F. Three credits. 11 Physics Building.* Professor Minor.

3. Physical Measurements. Experimental work in sound, light, magnetism and electricity of distinct quantitative character. Methods selected involving fundamental physical principles and illustrating their most important practical application. *Prerequisite:* Physics 1. *Both semesters, 2–4:30, W. Th. Two credits. 5 Physics Building.* Professor Minor.

20. Thesis Course. Undergraduate thesis work and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Minor.

XXX. MATHEMATICS.

Professor THURTELL.

1b. Algebra. Special emphasis is placed upon ratio, proportion, variation, progressions, undetermined coefficients, the binomial theorem, logarithms, series, and the theory of equations. *First semester, eight weeks, 8–9, daily. Two credits. 107 Morrill Hall.* Professor Thurtell.

2b. Solid Geometry. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester, four weeks, 8–9, daily, One credit. 107 Morrill Hall.* Professor Thurtell.

3b. Plane Trigonometry. Prominence is given to the relation of functions, transformation of trigonometric expressions, the derivation of formulas, and solution of triangles. *First semester, six weeks, 8–9, daily. Two credits. 107 Morrill Hall.* Professor Thurtell.

7. Analytic Geometry. A study of the straight line, transformation of coördinates, the conic sections, the general equation of the second degree, a few higher plane curves, and an introduction to analytic geometry of three dimensions. *Second semester, 10–11, daily. Five credits. 107 Morrill Hall.* Professor Thurtell.

8. Differential Calculus. A thorough study of the fundamental principles of the differential calculus, followed by their application to expansion in series, tangents and normals, contact and curvature, indeterminate forms, maxima and minima. *First semester, 10–11, daily. Five credits. 107 Morrill Hall.* Professor Thurtell.

9. Integral Calculus. Summation, rectification of curves, areas of plane curves, areas of surfaces of revolution, volumes of solids of revolution, volumes of other solids, moments of inertia. *Second semester, 9–10, daily. Five credits. 107 Morrill Hall.* Professor Thurtell.

10. Analytic Mechanics. The development of the essential principles of

mechanics, followed by exercise in solving practical problems. *Both semesters, 9–10, M. T. F. Six credits. 107 Morrill Hall.* Professor Thurtell.

11. Mechanics of Materials. Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *First semester, W. Th. Two credits. 107 Morrill Hall.* Professor Thurtell.

For description of other courses, see Mathematics, College of Arts and Science.

XXXI. MINING AND METALLURGY.

Professor YOUNG.

1. Mining. (General.) Excavation, explosives, tunneling, boring, shaft-sinking. *First semester, 9–10, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

2. Mining. (General.) Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, management, mine equipment, mining law. *Second semester, 9–10, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

3. Mining. (Laboratory.) Problems in engineering and in the design of mining and metallurgical machinery; review and discussion of technical journals and books. *First semester, 2–4:30, M. Second semester, 2–4:30, W. One credit. Mining Lecture Room, Mackay Mining Building.* Professor Young.

4. Mining. (Laboratory.) The work in this course consists of practice in sharpening and tempering hand and machine drills, in the use of these, and in forging and welding. *First semester, 8–12, Sat. Two credits. Mining Laboratory and Forge Shop, Mackay Mining Building.* Professor Young.

5. Excursions. During the year two extended trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit. The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formations is also done in order to facilitate interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide and reduction plants. A report of the observations, together with sketches, is required of each student. *Open to Seniors, School of Mines.* Professor Young.

6. Engineering Contracts and Specifications. *Second semester, 8–9, M. Mining Lecture Room, Mackay Mining Building.* Professor Young.

7. Metallurgy (General). Lectures and recitations. Physical properties of the more important metals and alloys; manufacture and physical properties of the structural metals; fuel and heat measurement; metallurgical furnaces, processes, and products; crushing and sampling of ores. *Prerequisite:* Chemistry 1, 2, 3; Mineralogy 1. *Both semesters, 8–9, T. Th. Mining Lecture Room, Mackay Mining Building.* Professor Young.

8. Metallurgy. (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, manage-

ment, and economic conditions. *Prerequisite:* Metallurgy 7. *First semester, 10–11, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

9. Metallurgy. (Copper, Lead, Zinc). Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 7. *Second semester, 10–11, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

10. Metallurgy. (Laboratory.) A series of experiments are given which are designed to supplement, in part, the class-room work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to supplement the small-scale experiments. *Prerequisites:* Metallurgy 7; Chemistry 5 and 6. *First semester, 2–4:30, W. Th. Second semester, 2–4:30, Th. F. Two credits. Metallurgical Laboratory, Mackay Mining Building.* Professor Young.

11. Assaying. Lectures and recitations. Methods of assay, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying, errors and losses in assaying, special topics. *Prerequisite:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *Both semesters, 8–9, W. Mining Lecture Room, Mackay Mining Building.* Professor Young.

12. Assaying. (Laboratory.) Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miners' pan, horn and batea. *Prerequisites:* Chemistry, 1, 2, 3, 5, 6; Mineralogy 1. *First semester, 2–4:30, M. One credit. Assaying Laboratory, Mackay Mining Building.* Professor Young.

Second semester, 2–4:30, M. T. Two credits. Assaying Laboratory, Mackay Mining Building. Professor Young.

20. Thesis. Each Senior student is required to hand in a thesis on some subject in mining or metallurgy or related branch of engineering. *Second semester. Hours to be arranged. Two credits.* Professor Young.

XXXII. MECHANICAL ENGINEERING.

Professor SCRUGHAM.
Mr. GOUGH.

1. Power and Power Transmission. A study of the operation and construction of steam, gas and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers. *Both semesters, 9–10, T. Th. 108 Morrill Hall.* Professor Scrugham.

2. Kinematics. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, and the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits. 303 Morrill Hall.* Mr. Gough.

3. Machine Design. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *Second semester, 9–10, M. F. 303 Morrill Hall.* Mr. Gough.

4. Theory of Steam Boilers. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horse-powers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler maker and the erecting engineer. *Second semester, 10–11, M. T. 108 Morrill Hall.* Professor Scrugham.

5. Steam Engine. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10, M. T. Th. F. 302 Morrill Hall.* Mr. Gough.

6. Gas Engines and Gas Producers. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases and oil is discussed and comparative costs and efficiencies considered. *Second semester, 9–10, M. W. F. 108 Morrill Hall.* Professor Scrugham.

7. Power Plants. The mechanical engineering of power plants is here presented in a non-mathematical way, and the machinery appliances and economical auxiliaries employed have their practical and experimental side shown. *Second semester, 1–2, W. 108 Morrill Hall.* Professor Scrugham.

8. Valve Gearing. A study of the various forms of engine valves, link motions, radial gears and shaft regulation. Each student must design some form of standard engine valve and governor, the data being taken from trade catalogues and engines actually in use. *Second semester, 1–4:30, Th. Two credits. 202 Mechanical Building.* Mr. Gough.

10. Engineering Laboratory Practice. This course covers the various methods of conducting and working up tests, determining efficiencies, driving powers, etc., and is supplemented by practical tests on a number of pieces of apparatus. *First semester, 10–11, T. Th. 108 Morrill Hall.* Professor Scrugham.

19. Inspection Visits. The most important engineering establishments in the vicinity are visited in order that the student may make a study of modern structures and methods in manufacture. *Open to Juniors and Seniors, School of Mechanical Engineering.* Professor Scrugham.

20. Thesis Course. The designing of a machine or the original investigation of some subject congenial to the student's taste and included in the scope of the curriculum. *Second semester. Hours to be arranged. Two credits.* Professor Scrugham.

XXXIII. ELECTRICAL ENGINEERING.

Professor SCRUGHAM.

1. Direct Current Machinery. Fundamental principles, theory, characteristics, operation and construction of dynamos, motors, storage batteries,

etc. *Prerequisite:* Physics 2. *First semester, 10–11, M. W. F. 108 Morrill Hall.* Professor Scrugham.

2. Electric Lighting, Wiring, and Distribution. *Prerequisite:* E. E. 1. *Second semester, 10–11, W. Th. F. 108 Morrill Hall.* Professor Scrugham.

3. Alternating Current Machinery. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* E. E. 1. *First semester, 1–2, W. Th. F. 108 Morrill Hall.* Professor Scrugham.

4. Applied Electricity. Application of electricity to machine tools, pumps, hoists, cranes, railways, etc. *Second semester, 1–2, M. T. 108 Morrill Hall.* Professor Scrugham.

5. Electric Laboratory. Use and care of electrical instruments. Tests of generators, motors, transformers, etc. *Second semester, 1–4:30, F. Two credits. 202 Mechanical Building.* Professor Scrugham.

XXXIV. MECHANIC ARTS.

Mr. Gough.
Mr. Clingman.

1. Wood Work. The students are taught the use of hand and machine tools and the most approved methods and processes followed in engineering construction. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling and the general use of carpenters' tools. The wood-turning involves the various principles of lathe work in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. *Both semesters, 2–4:30, M. T. Two credits. 201 Mechanical Building.* Mr. Gough and Mr. Clingman.

2. Forging. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case-hardening, and the making of a complete set of machine cutting tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, M. T., Section 2, 8–12, Sat. Two credits. 104 Mechanical Building.* Mr. Gough.

3. Machine Work. Instruction in this work consists of vise work in iron, including surface chipping, squaring and fitting, round filing, sawing, scraping and polishing. Machine work in metals includes exercises in straight and taper turning, slotting, drilling, boring, planing and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work, and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts

into the complete machine. *Both semesters, 2–4:30, M. T. Two credits. 10i Mechanical Building.* Mr. Gough.

XXXV. CIVIL ENGINEERING.

Professor BOARDMAN.

1. **Surveying.** The use and adjustments of the various kinds of instruments commonly used in surveying. Instruction is given in class room, field, and drafting room in land surveying, topographic, hydrographic, mining, and city surveying. *Both semesters. Recitations or Lectures, 1–2, Field or Drafting, 2–4:30, Th. F. Four credits.* Professor Boardman.

2. **Roads and Pavements.** Value and importance of improvement in country highways and city streets; methods of construction and maintenance; elements of cost; comparative adaptability. *Second semester, 1–2, T. W.* Professor Boardman.

3. **Structural Analysis.** Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester, 10–11, daily.* Professor Boardman.

4. **Structural Design.** General features and details of design, estimates of weight and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester, 9–11, daily.* Professor Boardman.

5. **Railroad Engineering.** Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of cost of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester, 1–2, M. T., 9–10, W. Field or Drafting, 2–4:30, M. T. Five credits.* Professor Boardman.

6. **Sewers.** Sewerage and sewage disposal for towns and cities. *Second semester, 10–11, T. W. Th.* Professor Boardman.

7. **Masonry Construction.** The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and estimates its cost. *Second semester, 2–4:30, M. T. Three credits.* Professor Boardman.

8. **Hydraulics.** A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water and the laws of its flow through openings and in channels of various kinds. *First semester, 8–9, T. W. Th.* Professor Boardman.

9. **Graphic Statics.** A study of the principles of graphic statics and their application in finding the stresses in framed structures. *First semester, 8–10, M. F.* Professor Boardman.

10. **Water Supply.** A study of public water supplies. Sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester, 8–9. T. W.* Professor Boardman.

11. **Irrigation Engineering.** A thorough study of the questions involved

in the collection, storage, and distribution of water for irrigation purposes. *Second semester, 8–9, Th. F.* Professor Boardman.

12. Mine Surveying. At the close of the college year the Junior class in Surveying takes a two weeks' trip to Virginia City. Here one of the mines is surveyed and mine maps constructed. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. Professor Boardman.

XXXVI. DRAWING.

Professor SCRUGHAM.
Assistant Professor LEWERS.
Mr. GOUGH.

1. Freehand Drawing. Perspective sketches of machines. Sketches of projections of machines. *First semester. Section 1, 9–10, Section 2, 10–11, daily. Two credits.* Assistant Professor Lewers.

2. Mechanical Drawing. Plates, lettering, machine parts, etc. *Second semester. Section 1, 9–10, Section 2, 10–11, daily. Two credits.* Assistant Professor Lewers.

3. Elementary Machine Design. Drawing and design of machine parts, modern shop arrangement, etc. *First semester, 8–9, daily. Two credits. 9 Morrill Hall.* Mr. Gough.

4. Descriptive Geometry. *Second semester, 8–9, daily. Two credits. 9 Morrill Hall.* Mr. Gough.

5. Machine Design. *First semester, 2–4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.

6. Steam Boiler Design. *Second semester, 2–4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.

7. Advanced Machine Design. *Both semesters, 2–4:30, W. Th. F. Three credits. 1 Mechanical Building.* Professor Scrugham.

XXXVII. MILITARY SCIENCE AND TACTICS.

Captain BRAMBILA.

1. Drill. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.* Eight semesters, 11–12, M. T. Th. F. One credit.* Captain Brambila.

2. Regulations. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.* Four semesters, 11–12, W. One credit.* Cadet Officers.

3. Duties of Company Officers. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.* Four semesters, 11–12, W. One-half credit.* Captain Brambila.

*For exceptions, see Organization of Battalion of Cadets, page 47.

THE STATE NORMAL SCHOOL

THE STATE NORMAL SCHOOL.

FACULTY.

JOSEPH EDWARD STUBBS.....President
ROMANZO ADAMS.....Professor of Education
JEANNE ELIZABETH WIER.....Professor of History
PETER FRANDSEN.....Professor of Biology
KATHERINE LEWERS.....Assistant Professor of Drawing
KATE CONGDON WOOD.....Instructor in Vocal Music
CHARLES LEROY BROWN.....Assistant in Biology

FOUNDATION.

The Legislature shall have power to establish normal schools, and such different grades of schools from the primary department to the University as in their discretion they may deem necessary. *State Constitution, Article XI, Section 5.*

THE NORMAL SCHOOL.

In accordance with the Constitution of the State, the Legislature has made provision for a normal school as a coördinate department of the University.

In the State of Nevada the high school is an integral part of the public school system, which includes the primary, grammar, and high schools.

The State Normal School offers courses of instruction, both professional and liberal, for students who wish to become teachers in the public schools of Nevada.

The State Normal School is organized to provide for the professional training of teachers. As a coördinate department of the University of Nevada it is possessed of the advantages offered by the well-equipped laboratories and the library of the University.

AIMS.

The purpose of the State Normal School in providing instruction in education is as follows.

To educate students for positions in the public schools.

To promote the study of educational science.

To teach the history of education and of educational systems and doctrines.

To secure to teaching the rights and advantages of a profession.

To give unity to our State educational system.

PRACTICE TEACHING.

The public schools of Reno with an attendance of over a thousand pupils and with a strong teaching corps constitute both model school and practice school for the Normal School. Each Senior student devotes four weeks to observation and teaching in the public schools under the joint supervision of the Professor of Education and the Superintendent of Public Schools, the regular teachers acting as model and critic teachers.

COURSES OF STUDY.

Two courses of study are offered in the Normal school: (1) The Advanced Course, and (2) the Elementary Course.

The Advanced Course is identical with the Liberal Arts or the General Science Course in the College of Arts and Science, except that during the Junior and Senior years it includes Courses 4, 5, 6, 7, and 8 in Education, and Psychology 1. Students graduating from this course are entitled to a State teacher's certificate of high-school grade. For information see pages 70–76 of this Register.

ELEMENTARY COURSE.

CONDITIONS OF ADMISSION.

1. Entrance to the Normal School shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. Candidates for admission who are not graduates of accredited schools must present themselves for examination in the common-school subjects, and in such high-school subjects as they may wish credit for.

3. Any school of the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

4. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

5. All students entering the Normal School must pass an examination in English composition, whether from an accredited school or not.

6. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS.

SUBJECTS AND CREDITS.

1.	English a, b and c	15 credits[1]
2.	Mathematics a, b and c	15 credits
3.	Physics	5 credits
4.	History a, b and c	10 credits
5, 7, 8.	Latin, French, or German a and b	10 credits
	Elective	5 credits

The five elective units may be selected from the subjects listed below:

5, 7, 8.	Latin, French, or German	5 credits
11.	Physical Geography	2½ credits
12.	Botany	2½ or 5 credits
13.	Zoölogy	5 credits
14.	Physiology	5 credits
15.	Bookkeeping	2½ credits

[1] A credit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout the year, each recitation being of not less than forty minutes duration. Fifteen units represent five recitations a week throughout three years; two and one-half units, a half year's work; ten units, two year's work.

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6. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

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2.	Mathematics a, b and c	15 credits
3.	Physics	5 credits
4.	History a, b and c	10 credits
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	Elective	5 credits

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11.	Physical Geography	2½ credits
12.	Botany	2½ or 5 credits
13.	Zoölogy	5 credits
14.	Physiology	5 credits
15.	Bookkeeping	2½ credits

[1] A credit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout the year, each recitation being of not less than forty minutes duration. Fifteen units represent five recitations a week throughout three years; two and one-half units, a half year's work; ten units, two year's work.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exception to this rule.

REQUIREMENTS FOR GRADUATION.

The Normal School diploma is awarded to students who have been in residence one year, and who have completed in a satisfactory manner the work outlined in the following course of study:

COURSE OF STUDY.

Education 1 (Theory)	3	3
Education 2 (Common-school Subjects)	5	5
Education 4 (Practice Teaching)		
History (Educational Aspects)		
Hygiene 1	3	3
Zoölogy 1	4	
Botany 1		4
Music 1	1	1
Drawing 10	1	1

COURSES OF INSTRUCTION.

EDUCATION.

Professor Adams.

1. **Educational Theory.** The principles of education as based upon those facts of psychology, child-study, and sociology which are of most direct importance to the teacher. The aim, the organization, management, and general method of study and instruction are included. *Both semesters, 10–11, M. W. F. 101 Stewart Hall.* Professor Adams.

For the description of the other courses of study in Education and in the following departments, see College of Arts and Science.

2. **Common-School Subjects.** Their mastery, their educational values, and the methods of instruction best adapted to the realization of these values. The subjects included in this course are: Reading, writing, spelling, composition and grammar, arithmetic, and geography. *Both semesters, 11–12, daily. 2 Stewart Hall.* Professor Adams.

4. **Practice Teaching.** Each student is required to devote four weeks to observation and teaching in the public schools of Reno, under the direction of the Professor of Education and the Superintendent of Schools. This practice work is preceded by the study of the Reno course of study and by lesson planning. *One month in second semester.* Professor Adams.

HISTORY.

Professor Wier.

1. **Educational Aspects.** The teaching of American History in the common schools. This course forms a portion of Education 2. Professor Wier.

HYGIENE.

Professor Frandsen.

1. **Physiology and Hygiene.** Special attention will be given in the second semester to the subject of Hygiene, including personal hygiene, hygiene of contagious diseases, emergencies, etc. Laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, F. Three credits. 101 Stewart Hall, 301 Hatch Hall.* Professor Frandsen and Mr. Brown.

ZOÖLOGY.

Professor Frandsen.

Mr. Brown.

1. **General Zoölogy.** An introduction to the whole field of Zoölogy. In the laboratory a number of animal types are studied, beginning with the simplest and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. Laboratory, 2–4:30, M. W. Four credits. 101 Stewart Hall, 301 Hatch Hall.* Professor Frandsen and Mr. Brown.

BOTANY.

Professor Frandsen.

Mr. Brown.

1. **Structural and Physiological Botany.** A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W. 101 Stewart Hall. Laboratory, 2–4:30, M. W. Four credits. 301 Hatch Hall.* Professor Frandsen and Mr. Brown.

MUSIC.

Mrs. Woods.

1. **Vocal Music.** Systematic instruction in the elements of vocal music is given, with especial reference to the needs of teachers in the public schools. *Both semesters, 1–2, T. Th. One credit. 203 Morrill Hall.* Mrs. Woods.

ART.

Assistant Professor Lewers.

5. **Teachers' Course.** Attention is given to the observation, the delineation and color of forms in nature, to ornamental design, to the conventionalizing of plant forms, and to harmony of color. *Both semesters, 8–9, M. W. F. One credit.* Assistant Professor Lewers.

THE UNIVERSITY HIGH SCHOOL

HIGH SCHOOL CALENDAR.

1908 SECOND SEMESTER, 1907–1908.

January 24	Friday	End of first semester.
January 25	Saturday	Examinations for admission.
January 27–28	Monday–Tuesday	Matriculation and registration of students.[1]
January 29	Wednesday	Recitations begin.
February 22	Saturday	Washington's Birthday.
April 16–20	Thursday–Monday	Easter recess.
May 30	Saturday	Decoration Day.
June 5	Friday	Examinations end.
June 5	Friday evening	Graduation exercises in Gymnasium.

SUMMER VACATION.

June 6	Saturday	Summer vacation begins.
August 31	Monday	Summer vacation ends.

1908 FIRST SEMESTER, 1908–1909.

September 2–5	Tuesday–Saturday	Examinations for admission.
September 7–8	Monday–Tuesday	Matriculation and registration of students.[1]
September 9	Wednesday	Recitations begin.
October 31	Saturday	Admission Day.
Nov. 26–29	Thursday–Sunday	Thanksgiving recess.
December 18	4:30 p. m. Friday to Monday, January 4	Holiday vacation.
1909		
January 5	Tuesday	Recitations resume.
January 29	Friday	First semester ends.

SECOND SEMESTER, 1908–1909.

January 29–30	Friday–Saturday	Examinations for admission.
February 1–2	Monday–Tuesday	Matriculation and registration of students.[1]
February 3	Wednesday	Recitations begin.
February 12	Friday	One Hundredth Anniversary of Lincoln's Birth.
February 22	Monday	Washington's Birthday.
April 8–12	Thursday–Monday	Easter recess.
May 30	Sunday	Decoration Day.
June 4	Friday	Examinations end.
June 4	Friday evening	Graduation exercises in Gymnasium.

[1] All, except new students, who apply for registration on days other than those named in the Calendar, will be charged a fee of two dollars.

SCHEDULE OF ENTRANCE EXAMINATIONS.

Wednesday, September 2, 1908.

9-11—Mathematics c, English a, German a.
1-3—History a, English c, Mathematics b.

Thursday, September 3, 1908.

9-11—Mathematics a, German b, Latin c.
1-3—Latin a, History b.

Friday, September 4, 1908.

9-11—English b, History c.
1-3—Physical Geography.

Saturday, September 5, 1908.

9-11—Physics.

HIGH SCHOOL FACULTY.

JOSEPH EDWARD STUBBS President
HAYWARD H. HOWE Principal, Mathematics
ROBERT LEWERS Commercial Subjects and Economics
MISS LAURA DE LAGUNA French
P. BEVERIDGE KENNEDY Agricultural Botany
GORDON HAINES TRUE Agriculture and Animal Husbandry
ROBERT MAURO BRAMBILA Military Science and Physical Geography
RALPH SMITH MINOR Physics
MAXWELL ADAMS Agricultural Chemistry
MISS KATE BARDENWERPER Domestic Arts and Science
SANFORD CROSBY DINSMORE Agricultural Chemistry
MISS KATHERINE LEWERS Drawing
MISS KATHARINE RIEGELHUTH German and English
ACHILLES CALLOWAY GOUGH Mechanic Arts
JOHN JAMES VAN NOSTRAND, JR. Latin
MISS EMILY BERRY History, English and Civics
..... Zoölogy and Physiology

COURSES OF STUDY.

Latin Course. Commercial Course.
Science Course. Agricultural Course.

AIM.

The purpose of the High School is to afford:

First—Adequate preparation for the University.

Second—An education to the many people who live in sections of the State where there are no high schools. The Latin and Science Courses fulfil both of these aims. *In all cases where high schools are established students should finish the work in the home school and not seek admission to the University High School.*

The Commercial Course has the distinct aim of preparing young people for a business life, but without sacrificing the solid requirements of a complete high-school course of study. The course of study is equal to the requirements in the better class of commercial high schools, and includes a very complete and thorough discipline in stenography, bookkeeping, type-

writing and commercial law upon the foundation of a sound English education.

The Agricultural Course is designed especially to afford the young farmers and stockmen of the State a high-school education and training in the elements of scientific agriculture.

EQUIPMENT.

Beginning with the first of September, 1908, the University High School will occupy the second floor of Stewart Hall and, in the main, all of the instruction will be given there. The subjects of physics, manual training, and domestic science will be given in the University rooms and laboratories.

The office of the Principal, Hayward H. Howe, and the Faculty of the High School will be the front room, south of the hallway.

CONDITIONS OF ADMISSION.

1. Admission to the High School will, in general, be by examination upon the subjects usually completed within the eight years of the primary and grammar grades, viz: Arithmetic, grammar, geography, elementary United States history, reading and penmanship.

2. Examinations may be taken

(a) At the opening of the High School in September. The time for examination in these subjects is named in the schedule of examination published after the calendar in this register.

(b) Examinations may be taken in the candidate's home school or at the office of the District Superintendent, to whom the necessary examination questions will be sent. The papers must in all cases be returned to the Principal of the High School for grading. Blank certificates for the above information will be sent free upon application to the Principal of the High School.

3. But candidates from Nevada in ungraded or grammar schools will be admitted upon credentials, provided the teacher has been accredited. Such teacher is one who has established the efficiency of his instruction through the success of his pupils in passing the entrance examination and in maintaining satisfactory standing as a student of the University.

4. Candidates from grammar schools of recognized standing in other States or from ungraded or grammar schools where a careful system of supervision is enforced will also be admitted on credentials.

ADVANCED STANDING.

Advanced standing will be granted upon any or all of the subjects prescribed upon the credentials of the candidates which have received the approval of the Principal and Faculty of the High School.

SPECIAL STUDENTS.

Special students may be admitted to the High School whenever in the judgment of the Principal and the Faculty of the High School such admission is thought desirable for the interests of both the student and the school. The conditions of admission for special students will be prescribed by the Faculty of the High School.

GRADUATION.

Any student who satisfactorily completes all the studies of any course of the High School will receive a diploma of graduation.

OUTLINE OF THE COURSES OF STUDY.

The Latin and Science Courses.

The Latin Course admits to all schools of the University, the Science Course to all schools except the School of Liberal Arts.

JUNIOR HIGH.

Latin Course.		*Science Course.*	
English a	5	English a	5
Latin a	5	Bookkeeping a	2
History a, English	3	Physical Geography a	3
Mathematics a	5	Mathematics a	5
Domestic Science a, Girls	1	History a, English	3
Manual Training, Boys	1	Domestic Science a, Girls	1
Rhetorical Exercises a	1	Manual Training, Boys	1
Drawing a	1	Rhetorical Exercises a	1
Physical Training, Girls	1	Drawing a	1
Military a, Boys	1	Physical Training, Girls	1
		Military a, Boys	1

MIDDLE HIGH.

English b	5	English b	5
Latin b	5	German a or French 1	5
History b, Ancient	3	History b, Ancient	3
Mathematics b	5	Mathematics b	5
Domestic Science b, Girls	1	Domestic Science b, Girls	1
Manual Training, Boys	1	Manual Training, Boys	1
Rhetorical Exercises b	1	Rhetorical Exercises b	1
Drawing b	1	Drawing b	1
Physical Training, Girls	1	Physical Training, Girls	1
Military a, Boys	1	Military a, Boys	1

SENIOR HIGH.

English c	3	English c	4
History c, American	4	History c, American	4
Latin c	4	German b or French 2	3
Physics a	4	Physics a	4
Mathematics c	5	Mathematics c	5
Domestic Science c, Girls	1	Domestic Science c, Girls	1
Manual Training, Boys	1	Manual Training, Boys	1
Rhetorical Exercises c	1	Rhetorical Exercises c	1
Drawing c	1	Drawing c	1
Physical Training, Girls	1	Physical Training, Girls	1
Military a, Boys	1	Military a, Boys	1

COMMERCIAL COURSE.

This course does not admit to the University, but is designed primarily for students who desire to enter commercial life.

JUNIOR HIGH.

English a 5	Domestic Science a, Girls 1
Bookkeeping a 2	Manual Training, Boys 1
Physical Geography a 3	Rhetorical Exercises a 1
Typewritting a (5 times a week) 2	Drawing 1
Mathematics a 5	Physical Training, Girls 1
	Military a, Boys 1

MIDDLE HIGH.

English b 5	Domestic Science b, Girls 1
Stenography a (5 times a week) 3	Manual Training, Boys 1
Mathematics b 5	Rhetorical Exercises b 1
Bookkeeping b (5 times a week) 3	Drawing 1
	Physical Training, Girls 1
	Military a, Boys 1

SENIOR HIGH.

English c 3	Domestic Science c, Girls 1
History c, American 4	Manual Training, Boys 1
Physics a 4	Rhetorical Exercises c 1
Mathematics c 3	Drawing 1
Stenography b (8 times a week) 5	Physical Training, Girls 1
	Military a, Boys 1

AGRICULTURAL COURSE.

This course does not admit to the College of Agriculture. It is designed for students who desire an acquaintance with the agricultural sciences for immediate application on the farm.

FIRST YEAR.

First Semester—A. M.	*Second Semester—A. M.*
English 5	English 5
Arithmetic 5	Arithmetic 5
Economic Zoölogy 5	Agricultural Botany 5
Rhetorical Exercises a 1	Rhetorical Exercises a 1
Military a or Physical Culture 1	Military a or Physical Culture 1
P. M.	*P. M.*
Study of Breeds 3	Study of Breeds 3
Carpentry 2	Blacksmithing 2

SECOND YEAR.

First Semester—A. M.	*Second Semester—A. M.*
English 5	English 5
Algebra 5	Algebra 3
Chemistry a 3	Physiology 5
Drawing 2	Rhetorical Exercises b 1
Rhetorical Exercises b 1	Military a 1
Military a 1	
P. M.	*P. M.*
Breeding of Animals 3	Horticulture 3
Chemistry b 2	Agricultural Chemistry c 2

THIRD YEAR.

First Semester—A. M.		*Second Semester—A. M.*	
English	5	English	5
American History and Civics	5	Political Economy	5
Farm Accounts	5	Farm Crops	5
Rhetorical Exercises c	1	Rhetorical Exercises c	1
Military a	1	Military a	1
P. M.		*P. M.*	
Agricultural Physics	5	Feeding and Care of Animals	3
		Dairy Practice	2

COURSES OF INSTRUCTION.

1. Latin.
2. French.
3. German.
4. English.
5. Rhetorical Exercises.
6. Drawing.
7. History and Civics.
8. Economics.
9. Zoölogy.
10. Physiology.
11. Physical Culture.
12. Agricultural Botany.
13. Horticulture.
14. Agriculture and Animal Husbandry.
15. Domestic Science.
16. Physical Geography.
17. Chemistry.
18. Physics.
19. Mathematics.
20. Mechanic Arts.
21. Commercial Law.
22. Bookkeeping.
23. Stenography.
24. Typewriting.
25. Military Science and Tactics.

1. Latin.

Latin a. Beginning Latin. *Collar and Daniell:* First Latin Book. *Collar:* New Gradatim. *D'Ooge:* Colloquia Latina. *Daily, 9 a. m.* Mr. Van Nostrand.

Latin b. Second-year Latin, Selections, Cæsar's Gallic War. *Greenough, D'Ooge and Daniell:* Second-year Latin. *D'Ooge:* Latin Composition. *D'Ooge:* Easy Latin for Sight Translation. *Bennett:* Latin Grammar. *Daily, 8 a. m.* Mr. Van Nostrand.

Latin c. Ovid, Mythology, Cicero. *Kelsey:* Selections from Ovid. *Gayley:* Classic Myths. *D'Ooge's* Selected Orations of Cicero. *D'Ooge:* Latin Composition II and III. *M. T. Th. F., 2 p. m.* Mr. Van Nostrand.

2. French.

French a. Elementary French. Thorough drill in grammatical principles and in translating simple English into French, and French into English. *Fraser and Squair:* French Grammar. *Rollins:* French Reader. Selections of French poetry will be committed to memory. *M. T. Th. F.* (alternative with German a), *8 a. m.* Professor de Laguna.

French b. Translation and Composition. The study of French grammar is continued, special stress being placed on the subjunctive and various idiomatic constructions. *About's* Mère de la Marquise, *Dumas'* La Tulipe Noire, *Lamartine's* Jeanne d'Arc, *Fontaine's* Douze Contes Nouveaux, and some historical and scientific French will be read. *François:* French Composition. *M. W. F., 9 a. m.* Professor de Laguna.

Note—When not otherwise indicated, all classes will meet regularly in the High School rooms in Stewart Hall.

3. German.

German a. Beginning German. The principles of German grammar will be carefully studied; easy German will be translated into English, and simple English into German. Selections from German poetry will be committed to memory. *Collar:* Eysenbach. *Lange:* German Method. *Huss:* German Reader. *Daily* (alternative with French 1), *8 a. m.* Miss Riegelhuth.

German b. Rapid Reading. *Leander's* Träumereien, *Bernhardt's* Auf der Sonnenseite, and other simple stories and plays. Composition. *Stein:* German Exercises, Part II. One of Schiller's dramas in second semester. *M. Th. F., 9 a. m.* Miss Riegelhuth.

4. English.

English a. Literature. I Ivanhoe, and for outside reading, any two of the following: The Talisman, The Three Musketeers, Treasure Island, The Last of the Mohicans, The Jungle Book, Quentin Durward, Rob Roy. II The Merchant of Venice. III The Vision of Sir Launfal, The Chambered Nautilus, Thanatopsis, Sella. IV The Alhambra. V Franklin's Autobiography, or Thoreau's Wild Apples.

Grammar, Composition, and Rhetoric.

Daily, 8 a. m. Miss Berry.

English b. Literature. I Silas Marner, and for outside reading, any two of the following: The House of Seven Gables, Lorna Doone, The Tale of Two Cities, The Last Days of Pompeii, Emma, Oliver Twist, The Christmas Carol. II Julius Cæsar. III The Deserted, The Cotter's Saturday Night, and any one of the following: Michael, The Rape of the Lock, Gray's Elegy, The Ancient Mariner, Childe Harold. IV The Great Stone Face, The Ambitious Guest, and for outside reading: Hamlin Garland's Main Traveled Roads, or Bret Harte's The Luck of Roaring Camp. V Addison's Sir Roger de Coverly, or Carlyle's Essay on Burns, or Holmes' The Autocrat of the Breakfast Table.

Composition and Rhetoric.

Daily, 10 a. m. Miss Riegelhuth.

English c. Literature. I The Vicar of Wakefield or Henry Esmond, and for outside reading, any two of the following: With Fire and Sword, The Cloister and the Hearth, The Newcomes, The Crisis, The Right of Way, The Virginian, Les Miserables. II Macbeth. III L'Allegro, Il Penseroso, Gareth and Lynette or the Passing of Arthur, The Princess; and selections from Wordsworth, Shelley, Keats, and Arnold. IV The Gold Bug, The Purloined Letter, and for outside reading, any one of the following: Maupassant's The Coward, The Piece of String, The Necklace; Kipling's The Day's Work; The Book of Ruth. V Burke's Speech on Conciliation with the American Colonies, or Webster's Bunker Hill Oration, or Stevenson's Essays of Travel.

Grammar, Composition, and Rhetoric.

Daily, 1 p. m. Miss Riegelhuth.

6. Drawing.

Drawing a. Drawing type solids, sphere, cube, cylinder, simple objects based on type forms; still life, designing. *T., 2 p. m.* Assistant Professor Lewers.

Drawing b. Drawing from cast, still life, designing, simple color study, sketching. *M., 3 p. m.* Assistant Professor Lewers.

Drawing c. Drawing from cast, still life, designing, harmony of color, sketching from nature. *F., 1 p. m.* Assistant Professor Lewers.

7. History and Civics.

History a. History of England. A short course dealing with important epochs rather than a continuous narrative of political events. The purpose of the course is to give a general view of the literary, industrial and constitutional development of the English people. *M. W. F., 1 p. m.* Miss Berry.

History b. Ancient History. This course during the first half-year deals with the characteristics of the early Oriental and the primitive American peoples. It is designed to give the student an insight into the origin and development of civilization. The second half year is devoted to a study of Greek and Roman institutional ideas. Constant reference is made to the work of the previous semester. *T. Th., 2 p. m.* Miss Berry.

History c. American History and Civics. A study of the development of the political, economic, religious, social and educational life in America. The expansion of Europe and especially of England in American explorations, commerce and settlement will be considered; also the development of English political principles. Civil government will be studied in connection with the history of the development of our institutions. *M. T. W. F., 3 p. m.* Miss Berry.

History d. American History and Civics. Short Course. *First semester. Daily. Hours to be arranged.* Miss Berry.

8. Economics.

Economics a. The Elements of Political Economy. *Second semester. Daily. Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

9. Zoölogy.

Zoölogy a. Economic Zoölogy. *First semester. Daily.*

10. Physiology.

Physiology a. Elementary Physiology and Hygiene. *Second semester. Daily. Hours to be arranged.*

11. Physical Culture.

Physical Culture will be required of all young women who are qualified to take the work in the gymnasium, when the services of a Physical Director shall be procured.

12. Botany.

Botany a. Agricultural Botany. Emphasis is given to the economic aspects of plants, such as seed-testing, weeds, forage and poisonous plants, improvement of plants by selection, etc. *First semester, 1-2, M. T. Th., 1-3, F. 105 Hatch Hall.* Professor Kennedy.

13. Horticulture.

Horticulture a. Orchard Technique, varieties of fruits suitable for Nevada conditions; shade and ornamental trees; vines and shrubs; care of lawns. *Second semester, 1-2, M. T. W. 105 Hatch Hall.* Professor Kennedy.

14. Agriculture and Animal Husbandry.

Agriculture a. Breeds of Live Stock. A study of the origin, development and use of the recognized breeds of farm animals. Text-book: *Plumb's* Types and Breeds of Farm Animals. *2-4, M. T. Th. 101 Hatch Hall.* Professor True.

Agriculture b. Principles of Breeding. A study of the principles underlying the art of breeding, the aim of which is to develop, maintain and improve the various breeds and types of farm animals and farm crops. *First semester, three times a week. Hours to be arranged. 101 Hatch Hall.* Professor True.

Agriculture c. Farm Crops. A study of the various field crops, their economic importance, how to grow and market them. *Second semester, daily. Hours to be arranged.* Professor True.

Agriculture d. Agricultural Physics, including physics of the soil, irrigation and drainage; rural architecture and farm mechanics. *First semester, daily. 2 Hatch Hall. Hours to be arranged. 101 Hatch Hall.* Professor True.

Agriculture e. Feeding and Care of Animals. A study of principles underlying, and problems connected with, profitable stock feeding. Ten lectures by Dr. Mack on some of the common diseases of farm animals. *Second semester, three times a week. Hours to be arranged. 101 and 202 Hatch Hall.* Professor True and Professor Mack.

Agriculture f. Practical butter making, including the use of the hand separator, ripening of cream, churning, working and packing butter, and the use of the Babcock milk test. *Second semester, two times a week. Hours to be arranged.* Professor True.

15. Domestic Science.

Domestic Science a. Fundamental principles of plain sewing—undergarments, shirt waists. Study of implements and appliances used in dressmaking. Taking measurements. Drafting skirt. Finishing skirt for trimming or draping. Choice of materials as to color and application to dress. Study of form, proportion, and line relating to ornament in dress. Plans for completing skirts. Cutting waists from patterns drafted by students of advanced grades from measurements taken by members of the class. Basting, fitting, trimming. General finish.

Equipment and care of kitchen. Practical cookery. Effects of heat upon foods. Adaptation of foods to needs of the body. Proportions in flour mixtures. Planning and cooking of simple meals according to approved dietetic standards. Yeasts. Breads. *Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

Domestic Science b. Color and textiles, relations and uses in personal adornment. Growth of silk and wool; manufacture of fabrics. Measurements of different figures; drafting plain waist according to different measurements. Cutting and matching plaids, stripes, and figures for waists; making and trimming the same. Drafting and making dress on the evening gown form. Designing and making student's own dress.

Cereals, vegetables, soups, meats, made-over dishes. Broiling, roasting.

Salads (and dressings). Batters, breads, plain pastry, cake, pudding, sauces. Table laying. Preparing meals. Marketing. *Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

Domestic Science c. Advanced drafting. Making dinner or evening dress. Choice of materials for gowns for special occasions. Handling of velvet. Making models of inexpensive materials to test the design. Child's dress—materials, drafting, cutting, etc. Coats and jackets; materials used. Practice in making pockets; applying same to garment. Tailor buttonholes. Lining and finish of coat. Collar making.

Soufflés, croquettes. Entrées, sauces. Roast game. Desserts; frozen creams. Preparation and serving of dinners, luncheons, and teas. Cost of living. Dietetics, sanitation. *Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

16. Physical Geography.

Physical Geography a. The course purposes to give the students a working knowledge of the surface of the earth, the causes operating in its division into various forms and the relation of all to human needs. The students are encouraged to make original observations on the surrounding country and are aided in drawing correct inferences and conclusions. When practicable, short field excursions are taken which are supplemented by illustrated lectures on other localities. *M. W. F., 2 p. m.* Captain Brambila.

17. Chemistry.

Chemistry a. Elementary Inorganic Chemistry. A course in the simple fundamental principles of chemistry. *8–9, M. W. F. Chemistry Building.* Professor Adams and Assistant Professor Dinsmore.

Chemistry b. Elementary Inorganic Chemistry. A course arranged to accompany Chemistry a, and intended to give the student a knowledge of the properties of simple chemical substances. *Laboratory, 2–4:30, T. Th. Chemistry Building.* Professor Adams and Assistant Professor Dinsmore.

Chemistry c. Agricultural Chemistry. A course dealing with the chemistry of soils, fertilizers, irrigation water, animal foods. *1–2, T. Th. Chemistry Building.* Professor Adams and Assistant Professor Dinsmore.

18. Physics.

Physics a. A thorough exposition of the principles of elementary Physics, based upon laboratory exercises by the pupils and other experimental illustrations; particular attention being paid to the connection between the principles of Physics and the facts and processes of everyday life. *Lectures, 10 a. m., M. W. F. Laboratory, T. Th., 9–11. Physics Building.* Professor Minor.

For Agricultural Physics, see Agriculture and Animal Husbandry.

19. Mathematics.

Mathematics a. Academic Algebra. Thorough drill in the fundamental process of addition, subtraction, multiplication and division, fractions and equations of the first degree.

Arithmetic. Review the solution of problems in arithmetic by algebraic methods, and a thorough study of the metric system of weights and measures. *Daily, 10 a. m.* Professor Howe.

Mathematics b. Academic Algebra. Powers and roots, equations of the second degree, fractional equations, the theory of exponents.

Plane Geometry. Books I, II of Beman and Smith's Plane Geometry. *Daily, 9 a. m.* Professor Howe.

Mathematics c. Plane Geometry. Books IV and V of Beman and Smith's Plane Geometry.

Solid Geometry. Beman and Smith's Solid Geometry. *Daily, 8 a. m.* Professor Howe.

20. Mechanic Arts.

Mechanic Arts a. Manual Training. Wood Shop. This course is designed to illustrate progressively the uses of tools and to lead to greater skill in the handling of the same. The exercises include simple pieces of work, such as book shelves, hat racks, and magazine stands. *2–4:30, Th. 201 Mechanical Building.* Mr. Gough.

Mechanic Arts b. Carpentry. This course continues Course a, but involves more advanced pieces of work. *First semester, 2–4:30, twice a week. 201 Mechanical Building.* Mr. Gough.

Mechanic Arts c. Forging. The elementary principles of welding, tempering, etc. *Second semester, 2–4:30, twice a week. 104 Mechanical Building.* Mr. Gough.

21. Commercial Law.

Commercial Law a. This course includes negotiable paper as outlined in McMaster's Commercial Paper. It touches upon other topics germane to business law and the text is supplemented with lectures and references to actual cases. McMaster's Irregular and Regular Commercial Paper; Gano's Commercial Law. *Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

22. Bookkeeping.

Bookkeeping a. The first year's work embraces the fundamental principles of double and single entry, including the making out of all business papers, such as bills, checks, drafts, notes, etc. *Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

Bookkeeping b. This course continues with the Marshall-Goodyear Voucher Accounting, Banking, etc., and is designed to make the student conversant with corporation accounting, modern labor saving systems and office work generally. *Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

Bookkeeping c. Farm Accounts. *First semester. Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

23. Stenography.

Stenography a. The first year's work is designed to ground the student thoroughly in the principles of the art. *Dement's* Pitmanic Shorthand. *Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

Stenography b. The second year's work is in the nature of laboratory

work, and includes dictation in typewriting as well as in stenography. Painstaking attention will be given to spelling and English composition. A good commercial speed is required, but the students will be advanced in this respect as far as circumstances will permit. Stenographers are in great demand, but they must be capable to hold positions. *Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

24. Typewriting.

Typewriting a. This work begins with the exercises outlined in the Van Sant charts, and after the student is capable of handling the keyboard he is given work in copying letters, legal documents, testimony, and other suitable practice to qualify him for accurate and rapid work. The department is equipped with up-to-date Remingtons, Smith-Premiers, and Bar-Locks. *Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

25. Military Science and Tactics.

Captain Brambila.

a. Drill. Squad, company and battalion drills; ceremonies; first aid to the injured; military signaling; band practice: small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.** *11 a. m., M. T. Th. F.* Captain Brambila.

*For exceptions see Organization of Battalion of Cadets, page 47.

ROSTER OF STUDENTS

September, 1907—March, 1908

GRADUATES.

Diplomas and Degrees were awarded on Commencement Day, June 5, 1907, as follows:

MASTER OF ARTS, *honoris causa.*

Mrs. Rose Viola Stewart Berry.

MASTER OF SCIENCE.

Laura Frances McDermott.

MINING ENGINEER.

William Maxwell Kearney.

BACHELOR OF ARTS.

Hirsh Louis Goldstein.
Amy Jeanne Parker.
Teiko Yamaguchi.

BACHELOR OF SCIENCE.

Jennie Hill.
Edna Grace Coll.

BACHELOR OF SCIENCE IN MINING ENGINEERING.

Jay Arnold Carpenter, *cum laude.*
James Jason Hart.
Andrew Charles Curran.
Miles Bryce Kennedy.
Milan Davidovich.
Robert William Sawyer.
Joseph DuSang Scott.
Fred Bruce Stewart.
Walter Ethelbert Weddle.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING.

James Dwight Leavitt.
George Delafield Powers.
Frank LeRoy Peterson.
Leland Stanford Weathers.

BACHELOR OF SCIENCE IN CIVIL ENGINEERING.

Francis Robert O'Leary.

NORMAL SCHOOL DIPLOMA.

Edith Lyle Able.
Theresa Helena Crane.
Jennie Cecelia Baker.
Katie Kling Drown.
Anna Dorcas Bonnifield.
Jessie Willa Evans.
Margaret Estella Hinch.
Bessie Green Keith.
Veronica Leehy.
Beulah Alice Morgan.
Honor Marie McNamara.
Olive Ogilvie.
Elizabeth Rand.
Susanna Rand.
Irene Roush.
Viva Jennie Wilson.
Beatrice May Wilson.

The following diplomas were awarded at the close of the first semester, Friday, January 24, 1908:

NORMAL SCHOOL DIPLOMA.

Magdelena Sofena Jepson.
Queen Wilson.

STUDENTS.

GRADUATE.

Kennedy, Miles Bryce	Mines	London, England

SENIORS.

Cowgill, Alberta	Liberal Arts	Reno
Davis, John Newman	Mines	Carson City
Doane, Arthur Verrill	Civil Engineering	Carson City
Elam, Anna Sophia	Liberal Arts	Reno
Freeman, Fred James	Civil Engineering	Sattley, Cal.
Frey, Lawrence John	Mines	Reno
Gallagher, Hugh James	Mechanical Engineering	Virginia City
George, Edward Thomas	Mechanical Engineering	Battle Mountain
Kane, June Mary	Liberal Arts	Verdi
Kline, Louis Francis	Mines	Reno
Mack, Irene	Liberal Arts	Reno
Massey, William Hinkle	General Science	Reno
Mihills, Melvin E.	Mechanical Engineering	Reno
Millar, Isabel	General Science	Gardnerville
Nadon, Joseph Alphonse	Mechanical Engineering	Reno
Overman, Eliza	General Science	Elko
Parker, Philip W.	Mines	White Plains, N. Y.
Prouty, Annie Estella	Liberal Arts	Reno
Ryan, Frank James	Mines	Caliente
Skinner, Orville Jay	Mines	Reno
Westall, Alfred Helm	Mines	Palo Alto, Cal.
Worthing, Leigh Ernest	Mines	Traver, Cal.

JUNIORS.

Crane, William Patrick	Mines	Elko
Gignoux, Jules Raymond	Mines	Reno
Homer, Dudley Denison	Mines	Somersville, Cal.
Lake, Winfield Scott	Mechanical Engineering	Reno
MacNair, Georgia Alice	Liberal Arts	Reno
O'Neill, Mary Gertrude	Liberal Arts	Reno
Palmer, Stanley Gustav	Mechanical Engineering	Reno
Reed, Mabel Lucy	Liberal Arts	Lovelock
Rhodes, John Milton	Mines	Reno
Roeder, Charles Daniel	Mines	Delamar
Ross, Silas Earl	Mines	Reno
Singer, Dorothy	Liberal Arts	Goldfield
Schuler, May Marcella	Liberal Arts	Goldfield
Snare, Reba Oliver	Liberal Arts	Goldfield
Williams, Homer L.	Mines	Rhyolite

SOPHOMORES.

Alexander, Wallace DuBois	Agriculture	Tonopah
Armstrong, Claude	Mines	Reno
Barber, Louis Edward	Liberal Arts	Reno
Bell, Forrest Francis	Mines	Winnemucca
Bennett, Clayton Alfred	Mines	Nevada City, Cal.
Bird, Donald Miller	Mechanical Engineering	Reno
Brown, Mildred Inez	Liberal Arts	Reno
Cochran, Henry Emerson	Civil Engineering	Winnemucca
Colyer, Lydia Elizabeth	Liberal Arts	Reno
Conkey, Irene Maude	Liberal Arts	Reno
Curnow, George	Mechanical Engineering	Reno
Gibson, Thomas R.	Mines	Reno
Goldsworthy, William Henry	Civil Engineering	Gold Hill
Harris, Walter Cameron	Mines	Reno
Heise, Henry Claude	Civil Engineering	Reno
Horn, John Stephen	General Science	Germany
Kallenberger, Wendell Werner	Mines	Bristol
Mack, Ernest Deal	Mines	Reno
McKenzie, Clyde Stuart	Mines	Oakland, Cal.
Miller, James Archibald	Mechanical Engineering	Gardnerville
Ohmert, Audrey Winifred	Liberal Arts	Reno
Porter, Elmer Alfred	Mechanical Engineering	Reno
Rossi, Nicholas Louis	Civil Engineering	Johnsville, Cal.
Sears, John Ernest	Civil Engineering	San José, Cal.
Sielaff, Clara Pearl	Liberal Arts	Reno
Somers, Mark	Liberal Arts	Reno
Tillotson, Kenneth Edwin	Mines	Rockville, Conn.
Unsworth, Scott	Liberal Arts	Reno
Young, Blanche Nevada	Liberal Arts	Lovelock

FRESHMEN.

Arentz, Paul Raymond	Mines	Oak Park, Ill.
Barber, Elda Marion	Liberal Arts	Reno
Beckner, Homer D.	Mines	Bement, Ill.
Bender, Florence	General Science	Reno
Bray, Florence Leslie	Liberal Arts	Reno
Bridges, William Harry	Liberal Arts	Sparks
Cafferata, Frederick James	Mechanical Engineering	Reno
Cashbaugh, James A.	Mines	Bishop, Cal.
Carey, Alexander William	Mines	Elko
Cleator, Cora	Liberal Arts	Reno
Daudel, George H. W.	Mines	Genoa
Dewar, Ellen Nevada	Liberal Arts	Elko
Drescher, Otto C.	Mechanical Engineering	Milwaukee, Wis.
Fulton, Helen	Liberal Arts	Reno
Folsom, Ernest Gilman	Mechanical Engineering	Reno
Frisch, Edward Chester	Mines	Reno
Glaser, George Mathias	Mechanical Engineering	Halleck

Graham, Katherine Nevada	Liberal Arts	Ely
Hale, Frank Griswold	Mines	Palisade
Hart, Earl William	Mines	Goldfield
Hancock, Rosalind	Liberal Arts	Gold Hill
Hash, Vera Ellen	Liberal Arts	Reno
Henderson, Virgil Munroe	Mines	Chico, Cal.
Hilp, Blanche Frederica	Liberal Arts	Reno
Hobbins, Frank	Mines	Reno
Homer, Carl N.	Mines	Somersville, Conn.
Jepson, Melvin Edward	Mechanical Engineering	Verdi
Jones, Leslie B. C.	Mines	Elko
Keeney, Frank Harold	Mines	Springfield, Mass.
Kemp, Lorin W.	Mines	San Francisco, Cal.
Larcombe, Hazel	Liberal Arts	Reno
Lautenschlager, Thurman H.	Mines	Military Home, Ohio
Layman, Randall Brooks	Mechanical Engineering	Reno
Leavitt, Louis Selwyn	Mechanical Engineering	Santa Cruz, Cal.
Linton, Will Donald	Mechanical Engineering	Reno
Mead, Agnes	Liberal Arts	Reno
McKenzie, William Joseph	General Science	Tonopah
McKenzie, William Wallace	Mines	Virginia City
McVicar, Neil William	Liberal Arts	Smith
Nease, George H.	Mechanical Engineering	Sparks
O'Brien, Alice Woodward	Liberal Arts	Sparks
Otis, Mildred	Liberal Arts	Reno
Parker, Frances Dorothy	Liberal Arts	Ely
Payne, Harvey M.	Mines	Reno
Pike, Gertrude Beatrice	Liberal Arts	Reno
Porter, Chester Orlando	Mines	Verdi
Selby, Lisle J.	Mines	Monterey, Cal.
Sparks, Clinton Walter	Mines	Tonopah
Smiley, Wilbur Harrison	Civil Engineering	Elko
Stewart, Royal M.	Mines	Reno
Steffan, Jake Frederick	Mechanical Engineering	Reno
Taylor, Hazel Belle	Liberal Arts	Silver City
Teel, Claude	Mines	Bishop, Cal.
White, Harriet Howell	Liberal Arts	Reno
Wilson, Irvin	Mechanical Engineering	Hollister, Cal.
Wood, Marjorie	General Science	Hollister, Cal.
Young, Clarence L.	Mechanical Engineering	Lovelock

NORMAL.

Bartels, Kate	Big Pine, Cal.	McNeil, Florence Jane	Tonopah
Dunlop, Hazel Mary	Reno	McVicar, Mabel	Smith
English, Christine J.	Gold Hill	O'Hara, Katherine F.	Virginia City
Folsom, Frances Ethel	Reno	Schweiss, Theresa A.	Virginia City
Fuss, Florence Margaret	Lovelock	Spears, Sarah Margaret	Lee, Cal.
Gregory, Blanche Venus	Reno	Sullivan, Annie Esther	Virginia City
Higley, Emma Nevada	Reno	Wilson, Queen	Yerington
Johnson, Emma Ethelwyn	Elko	Wilson, Genevieve	Nordyke
Little, Mary Louise	Reno	Yparraguirre, Emilie Frances	Reno
Marks, Lila Lavinia	Gold Hill		

SPECIALS.

Anderson, Walter W.	Mines	Reno
Baatz, Terryl Frederic	Liberal Arts	Reno
Badger, Charles Kilgore	Mechanical Engineering	Reno
Brown, Chas. LeRoy	General Science	Reno
Catlin, Mrs. William Prince	Liberal Arts	Reno
Clarke, Mary Rose	Liberal Arts	Reno
Clingman, Earl Newton	Mechanical Engineering	Chicago, Ill.
Colton, George R.	Mechanical Engineering	Goldfield
Cooke, Henry Bowman	Mines	Salt Lake City, Utah
Crosby, Lois Rebecca	Liberal Arts	Georgia
Crowther, Evelyn	Liberal Arts	Reno
Damon, Ernest Newell	Civil Engineering	Reno
Doherty, William Francis	Mechanical Engineering	Reno
Fink, Nettie C.	Liberal Arts	Reno
Geyer, Berkeley Willard	Mines	Washington, D. C.
Hart, Chester A.	Mines	Reno
Harris, Lucy Newbolt	Liberal Arts	Reno
Herd, Hugh P.	Mines	Colusa, Cal.
Houlahan, James A.	Mines	Goldfield
Claude, Howard	Mech. Engineering	Binghampton, N. Y.
Houchins, Edward Leicester	Liberal Arts	Reno
Hudson, Holland	Liberal Arts	Reno
Jameson, Boadicea	Liberal Arts	Reno
Johansen, Carl	Civil Engineering	Rio Grande, Cal.
Keough, Charles Devereux	Mines	Berlin
Knemeyer, Marie Erna	Liberal Arts	Yerington
Langwith, Alice Frances	Liberal Arts	Reno
Larcombe, Mabel	Liberal Arts	Reno
Long, Leon Root	Mines	Amboy, Ill.
Martin, Alden Karl	Liberal Arts	Reno
Mack, Effie Mona	Liberal Arts	Reno
McMillan, Margaret	Liberal Arts	Reno
McIntyre, Pere	Mines	Salt Lake City, Utah
Minor, Mrs. R. S.	Domestic Science	Reno

Moore, James Eugene	Mines	Bullfrog
Netherton, Stanley Lucas	Mines	Yerington
Parkman, Mrs. G. W.	Liberal Arts	Reno
Reinken, William Arthur	Mines	Elko
Sherwin, John Dickerson	Mines	East Auburn, Cal.
Southworth, George Arvin	General Science	Gardnerville
Stoddard, Lola	Liberal Arts	Reno
Talbot, Ione	Liberal Arts	Reno
Thompson, Amy Jessie	Liberal Arts	Reno
Tolbert, Elinor	Liberal Arts	Reno
Webster, Ethel	Liberal Arts	Reno
Yamauchi, George Shigeyasu	Liberal Arts	Japan
Young, Leland Stanford	Mechanical Engineering	Lovelock

THE UNIVERSITY HIGH SCHOOL.

GRADUATES—1907.

Latin Course.

Dora Shonerd. Frances Dorothy Parker.
Florence Bray. Florence Fuss.

Science Course.

Marjorie Wood. Emma Graham.
Melvin Jepson.

SENIOR HIGH.

Allen, Cecyl	Latin	Fallon
Allen, Ethel	Commercial	Reno
Atcheson, Henry William	Commercial	Sweetwater
Anker, Florence	Latin	Lovelock
Blake, Helen	Latin	Virginia City
Brown, Irene Veronica	Latin	Silver City
Catlin, Gladys	Latin	Winnemucca
Conway, Elsie	Commercial	Sweetwater
Conway, Maud	Latin	Sweetwater
Crakes, Grace	Latin	Manila, Iowa
Ellithorpe, Melvin	Science	Reno
Frisch, Emma	Commercial	Reno
Foley, Isabel	Latin	Carson City
Gibson, Sam Alex.	Latin	Reno
Hatton, Ernest Lennard	Science	Lovelock
Henningson, Emma Carolina	Science	Gardnerville
Hellwinkel, Josephine Anna	Science	Gardnerville
Jensen, Kristena	Latin	Gardnerville
Kelley, Lena	Latin	Delamar
Kendrick, Lawrence Thomas	Science	Battle Mountain
Langwith, Eleanor Miriam	Latin	Reno
Langwith, Margaret	Latin	Reno
Lonkey, Verdi Nevada	Latin	Verdi

Pruett, Dale	Science	Reno
Reed, Florence	Latin	Lovelock
Redman, Joseph	Science	Reno
Shonerd, Roscoe	Latin	Springdale
Shonerd, Dora Taylor	Commercial	Springdale
Souchereau, Clarinda	Latin	Verdi
Smither, Thomas	Latin	Reno
Tibbald, Carl Lampee	Science	Reno
Tinney, Margaret Hazel	Latin	Silver City
Walker, Stella	Commercial	Virginia City
Wilson, Alice Carol	Commercial	Tonopah
Winter, Bessie Marguerite	Commercial	Whiterock

MIDDLE HIGH.

Atcheson, Hazel	Commercial	Sweetwater
Berry, Sadie	Commercial	Sierraville, Cal.
Bray, Mildred	Science	Reno
Barton, James Francis	Commercial	Yerington
Chapman, Gladys Eudora	Latin	Reno
Cottrell, Myrtle	Commercial	Reno
Crane, Josephine	Science	Reno
Curler, Augusta	Science	Reno
Downey, Charles LeRoy	Science	Reno
DeLonchant, Philip Felix	Science	Reno
Gulling, Charles Alvin	Science	Reno
Jensen, Ingeman	Science	Gardnerville
Jones, Bertha	Latin	Sweetwater
Kent, Ira L.	Science	Fallon
Licking, William Errol	Latin	Battle Mountain
Langwith, Mary	Commercial	Reno
Linton, Esther Bessie	Latin	Reno
McKenzie, John	Commercial	New Mohawk, Cal.
McMillan, Stuart	Science	Reno
McKenzie, Louise	Commercial	New Mohawk, Cal.
Munroe, Mary Josephine	Latin	Ely
Morrison, William	Agricultural	Mill Station
Oakford, Leon	Agricultural	Goldfield
Orr, Elda	Science	Reno
Patrick, Lloyd	Science	Reno
Pohle, Clayton	Science	Reno
Rising, Carol	Latin	Dayton
Ross, John	Science	Stockton, Cal.
Randall, Richard	Commercial	Dayton
Ross, Vera	Science	Reno
Schuler, Isabelle	Science	Reno
Storms, Gladys Lillian	Latin	Reno
Taylor, Enid Helena	Commercial	Mina
Vann, Rachel	Latin	Mohawk, Cal.
Vann, Jessie	Latin	Mohawk, Cal.

Westfall, Nola	Latin	Lovelock
Warren, Erma Belle	Latin	Reno
Williamson, Dorothy	Latin	Reno
Williamson, David George	Latin	Reno
Wilson, Nathaniel	Latin	Reno
Winter, Edith Emelyn	Latin	Whiterock

JUNIOR HIGH.

Allen, Alma Mae	Latin	Fallon
Arkell, Edwin	Science	Reno
Atchison, Oliver B.	Commercial	Fairview
Bates, Edna	Commercial	Verdi
Bender, Edwin	Science	Reno
Briggs, Frances	Latin	Reno
Carpenter, Bessie Louise	Science	Reno
Colyer, St. Clair	Commercial	Reno
Cleator, Chester	Science	Reno
Damm, Petra	Commercial	Lovelock
Diericks, Hulda	Commercial	Gardnerville
Donohue, Millie	Latin	Bodie, Cal.
Dugan, George	Commercial	Tonopah
Fulstone, Edith	Commercial	Sweetwater
Grey, Eva	Latin	Reno
Goodhue, Maude	Commercial	Quincy, Cal.
Harriman, Lester Parker	Science	Fallon
Harris, Nettie	Latin	Reno
Hess, Cecil	Science	Reno
Hobart, Ralph Emerson	Science	Virginia City
Hodgkinson, Lawrence Jackson	Latin	Reno
Howe, Lillian	Science	Reno
Howard, Rowena	Latin	Reno
Howard, Clara Anastasia	Commercial	Fairview
Huffman, William H.	Science	Smith, Oregon
Jones, Nellie Dorothy	Commercial	Beckwith, Cal.
Kaiser, Leo	Commercial	Greenville, Cal.
Kearney, Alice Marguerite	Commercial	Carson City
Krall, Edwin White	Science	Reno
Liebendorfer, William	Science	Rhyolite
McCrea, Anthony	Science	Reno
Milner, Byron	Science	Reno
McCarthy, Ruth	Commercial	Hawthorne
Murray, Hazel	Commercial	Goldfield
Oliver, Earl	Commercial	Reno
Pickett, Helen	Latin	Reno
Pike, Milton	Latin	LaPorte, Cal.
Plummer, Amos S.	Commercial	Mineral Hill
Rising, Richard	Science	Dayton
Randall, Roy	Science	Dayton
Stanford, Irving Henry	Science	Fallon

Smith, Alice Wilhelmina	Latin	Bodie, Cal.
Starke, William, Jr.	Commercial	Gardnerville
Sutherland, Vera	Science	Reno
Thoma, Roxy Bigelow	Latin	Reno
Wilson, Beth	Commercial	Nordyke
Wilson, Joseph Willis	Commercial	Nordyke
Young, Mary	Latin	Lovelock
Zeigler, Lurayne V.	Latin	Sparks

ENROLLMENT OF THE SPARKS SCHOOL FOR 1907-1908.

These young men are apprentices in the railroad shops of the Southern Pacific Company at Sparks. The Mechanical Engineering Department is giving them instruction two evenings each week in elementary branches of mechanical drawing and the elements of steam design.

The following list of names comprises the men in the school:

Belmont, Frank	Sparks	Jackson, Ernest Warren	Sparks
Beemer, Elwood Hayes	Sparks	Johnson, George Waller	Sparks
Borchert, Frank	Sparks	Jones, Edward	Sparks
Branch, David McKee	Sparks	Langdon, Frank Evelyn	Sparks
Bryant, Franklin Eugene	Sparks	Laking, Charles Edward	Sparks
Buckley, Arthur	Sparks	McLeod, Myron Carlton	Sparks
Buchannan, William Isaac	Sparks	Madden, Roy	Sparks
Cole, Leon	Sparks	Miller, Byron	Sparks
Comstock, Lisle	Sparks	Nelson, Christian	Sparks
Cosby, William Lee	Sparks	Newman, Percon	Sparks
Crouch, Clyde Edward	Sparks	Paul, George	Sparks
Curtis, Homer Granville	Sparks	Philbrick, George Louis	Sparks
Curry, George	Sparks	Railt, Bert George	Sparks
Dippel, John Henry	Sparks	Sullivan, Dennis	Sparks
Dolan, Forrest Murray	Sparks	Smith, Robert Henry	Sparks
Echeverria, Frank	Sparks	Smith, Peter	Sparks
Fairchild, Edmund	Sparks	Smith, William	Sparks
Finley, Elmo Yeargin	Sparks	Wolfsberger, Edward	Sparks
Foster, Edward	Sparks		

SUMMARY.

School of Liberal Arts—		
Seniors	5	
Juniors	6	
Sophomores	9	
Freshmen	19	
Special	23	
		62
School of Mines—		
Seniors	8	
Juniors	7	
Sophomores	9	
Freshmen	23	
Post-graduate	1	
Special	13	
		61
School of General Science—		
Seniors	3	
Juniors	0	
Sophomores	1	
Freshmen	3	
Special	2	
		9
School of Mechanical Engineering—		
Seniors	4	
Juniors	2	
Sophomores	4	
Freshmen	12	
Special	6	
		28
School of Civil Engineering—		
Seniors	2	
Juniors	0	
Sophomores	5	
Freshmen	1	
Special	2	
		10
School of Agriculture—		
Seniors	0	
Juniors	0	
Sophomore	1	
Freshmen	0	
		1
Normal School		19
Domestic Science Special		1
Total University Schools		191
Carried forward		191

Brought forward		191
UNIVERSITY HIGH SCHOOL.		
Senior High	35	
Middle High	41	
Junior High	49	
		125
Grand total		316
Enrollment of men		167
Enrollment of women		149

SCHOLARSHIPS AND PRIZES.

The Normal School Special Prize for highest scholarship. Fifty dollars. Miss ANNA BONNIFIELD.

The University Special Prize for highest scholarship (open to Freshmen, Sophomores and Juniors). Fifty dollars. Miss JUNE KANE.

The Philo C. Bennett Prize for the best essay on the principles of free government. (Subject: "The Veto Power of the President".) Thirty-two dollars. Mr. LOUIS GOLDSTEIN.

The Military Prize for highest score in target shooting. Five dollars. Corporals HAROLD J. WHITE and CHARLES D. KEOUGH (score, forty-one).

Cecil Rhodes Scholarship. Fifteen hundred dollars a year for three years. ARTHUR L. ST. CLAIR. W. SCOTT UNSWORTH. (This scholarship is open to the young men of the State subject to the conditions specified by the Rhodes Trust.)

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GENERAL INDEX.

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UNIVERSITY OF NEVADA BULLETIN

VOL. III APRIL 1, 1909 No. 2

UNIVERSITY OF NEVADA REGISTER



TWENTY-FIRST ANNUAL NUMBER

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA
RENO, NEVADA

Entered in the Postoffice at Reno, Nevada, as second-class matter under Act of Congress, July 16, 1894

UNIVERSITY OF NEVADA BULLETIN

VOL. III APRIL 1, 1909 No. 2

REGISTER

OF THE

UNIVERSITY OF NEVADA

For the Year April 1, 1908—April 1, 1909

WITH ANNOUNCEMENTS FOR THE YEAR APRIL 1, 1909—APRIL 1, 1910

TWENTY-FIRST ANNUAL NUMBER

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BY THE
UNIVERSITY OF NEVADA
RENO, NEVADA


UNION
LABEL

OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, April 1, 1909.

To His Excellency, DENVER S. DICKERSON, *Acting Governor of the State of Nevada.*

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1908-1909, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the Students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: JOHN SUNDERLAND,
Chairman.

GEORGE H. TAYLOR, *Secretary.*

UNIVERSITY CALENDAR

1909 FIRST SEMESTER, 1909-1910

August 23-24	Monday-Tuesday	Examinations for admission.
August 23-24	Monday-Tuesday	Reexaminations to remove conditions.
August 24-25	Tuesday-Wednesday	Matriculation and registration of students.
August 26	Thursday	Recitations and lectures begin.
August 29	Sunday	University Convocation at 3 p. m. in Gymnasium.
October 31	Sunday	Admission Day.
November 24-28	Wednesday-Sunday	Thanksgiving recess.
December 22	Wednesday	First semester ends.
December 23	Thursday	Holiday vacation begins.
1910		
January 9	Sunday	Holiday vacation ends.

SECOND SEMESTER, 1909-1910

January 10-11	Monday-Tuesday	Examinations for admission.
January 10-11	Monday-Tuesday	Reexaminations to remove conditions.
January 11-12	Tuesday-Wednesday	Matriculation and registration.
January 13	Thursday	Recitations and lectures begin.
January 16	Sunday	University Convocation at 3 p. m. in the Gymnasium.
Februdry 12	Saturday	Lincoln's Birthday.
February 22	Tuesday	Washington's Birthday.
March 24-27	Thursday-Sunday	Easter recess.
May 21	Saturday	Senior examinations end.
May 27	Friday	High School Commencement.
May 28	Saturday	Examinations end.
May 28	Saturday	Annual meeting of the Honorary Board of Visitors.
May 29	Sunday	Baccalaureate Sunday.
May 30	Monday	Decoration Day.
May 31	Tuesday	Thesis Day.
June 1	Wednesday	Annual meeting of the Board of Regents.
June 2	Thursday	UNIVERSITY COMMENCEMENT.

OFFICERS OF ADMINISTRATION

THE REGENTS OF THE UNIVERSITY

The Hon. JOHN SUNDERLAND (1907-1911) Chairman.....Reno
The Hon. CHARLES B. HENDERSON (1907-1911).....Elko
The Hon. A. A. CODD (1909-1913).....Goldfield
The Hon. JOHN J. SULLIVAN (1909-1911).....Virginia City
The Hon. FRANK WILLIAMS (1909-1913).....Good Springs
Mr. GEORGE H. TAYLOR, Secretary.....Reno

THE HONORARY BOARD OF VISITORS

The Hon. FRANK H. NORCROSS, Chairman...Carson City, Ormsby County
The Hon. HERMAN DAVIS.....Dayton, Lyon County
The Hon. H. A. COMINS.....Ely, White Pine County
The Hon. GEORGE F. TALBOT.....Elko, Elko County
The Hon. WM. J. O'BRIEN.....Austin, Lander County
The Hon. KEY PITTMAN.....Tonopah, Nye County
The Hon. H. V. MOREHOUSE.....Goldfield, Esmeralda County
The Hon. N. R. FITZPATRICK.....Fallon, Churchill County
The Hon. J. A. ASCHER.....Reno, Washoe County
The Hon. JOHN O'KANE.....Lovelock, Humboldt County
The Hon. FRED DANGBERG.....Gardnerville, Douglas County
The Hon. C. H. DUBORG.....Beowawe, Eureka County
The Hon. J. A. DENTON.....Caliente, Lincoln County
The Hon. ALFRED CHARTZ.....Carson City, Ormsby County
The Hon. JAMES J. McCORMICK.....Virginia City, Storey County

OFFICERS OF THE FACULTY

President.....JOSEPH EDWARD STUBBS
Vice-President.....ROBERT LEWERS
Superintendent of Buildings and Grounds.....RICHARD BROWN
Assistant Registrar.....LOUISE M. SISSA
Librarian.....JOSEPH DIEFFENBACH LAYMAN
Office Secretary.....CAROLYN M. BECKWITH

EXECUTIVE COMMITTEE

JOSEPH EDWARD STUBBS
ROBERT LEWERS
HENRY THURTELL
JAMES EDWARD CHURCH, JR.
PETER FRANDSEN
GEORGE J. YOUNG
RALPH S. MINOR

RICHARD BROWN

Superintendent of Buildings and Grounds and Master of Lincoln Hall

Cutter in United States Mint, Carson City, 1889–1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891–1899; Superintendent of Buildings and Grounds, University of Nevada, 1891–; Superintendent of University Dining Hall, University of Nevada, 1895–; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–.

THOMAS W. COWGILL

Emeritus Professor of the English Language and Literature

A.B., Harvard University, 1883; Professor of English, Mt. Union College, Ohio, 1884–85; Professor of Greek and English, Kansas Wesleyan University, 1886–1890; Fellow in English, Vanderbilt University, 1887–88; A.M., Vanderbilt University, 1888; Teacher of Greek and Latin, St. John's School, Salina, Kansas, 1890–91; Professor of History, Rhetoric, and English Literature, University of Nevada, 1891–97; Professor of the English Language and Literature, 1897–99; Professor Emeritus, 1899–.

HENRY THURTELL

Professor of Mathematics and Mechanics

B.S., Michigan Agricultural College, 1888; Instructor in Mathematics, Michigan Agricultural College, 1888–1890; Graduate Student in Mathematics, University of Michigan, winters of 1888–1891; Assistant Professor of Mathematics, Michigan Agricultural College, 1890–91; Professor of Mechanics and Mechanical Drawing, University of Nevada, 1891–97; Graduate Student in Mathematics, University of Chicago, summer quarter, 1895; Professor of Mathematics and Mechanics, University of Nevada, 1897–; Dean of the Faculty, 1900–05; State Engineer of Nevada, 1905–07; Member State Railroad Commission, 1907–.

JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher, District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896– (absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

UNIVERSITY FACULTY

OFFICERS OF INSTRUCTION AND ADMINISTRATION

With the exception of the President, the names of all professors and officers in the first group whose appointment antedates April, 1907, are arranged in order of appointment to rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, assistants, and officers are arranged in their respective groups according to order of appointment to present rank.

JOSEPH EDWARD STUBBS

President of the University, Professor of Elementary and International Law

Instructor in Greek and Latin, Ohio Wesleyan University, 1872–75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880–86; President Baldwin University, Ohio, 1886–94; Honorary D.D., German Wallace College, 1890; President Ohio College Association, 1891–92; President of the University of Nevada, 1894–; Professor of Psychology and Ethics, 1894–95; Professor of Political Science and Ethics, 1895–1904; Professor of Elementary and International Law and Greek, 1904–; President Association of American Agricultural Colleges and Experiment Stations, 1899–1900; LL.D., Ohio Wesleyan University, 1905.

ROBERT LEWERS

Vice-President, Professor of Political Economy, and Teacher of Commercial Subjects

Teacher, Public School, Mill Station, Nevada, 1882–83; Sutro, Nevada, 1884–85; Dayton, Nevada, 1886–89; Registrar, 1890–1906; Professor of Political Economy and Principal of the Commercial School, University of Nevada, 1890–.

MARY WHITESIDES EMERY

Emeritus Professor of Pedagogics

Illinois State Normal School; County Superintendent of Schools, Peoria, Illinois, 1878–1890; Professor of Pedagogics, University of Nevada, 1890–1900; Principal of the Training School, 1890–91; Principal of the Normal School, 1891–1900; Honorary M.A. (Pedagogics), University of Nevada, 1895; Professor of Pedagogics and English, University of Nevada, 1900–1902; Professor Emeritus, 1902–.

RICHARD BROWN

Superintendent of Buildings and Grounds and Master of Lincoln Hall

Cutter in United States Mint, Carson City, 1889–1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891–1899; Superintendent of Buildings and Grounds, University of Nevada, 1891–; Superintendent of University Dining Hall, University of Nevada, 1895–; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–.

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JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher, District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896– (absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

LAURA DE LAGUNA

Professor of Modern Languages

Instructor in English, Mills Seminary, California, 1888–89; Instructor in French and English, Oakland Seminary, California, 1890–91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894–95; Student Romance Languages, Rome, Paris, 1895–96; Instructor in Modern Languages, University of Nevada, 1896–99; Assistant Professor of Modern Languages, 1899–1901; Associate Professor of Modern Languages, 1901–06; Professor of Modern Languages, 1907–.

JEANNE ELIZABETH WIER

Professor of History

Teacher, Public Schools, Rockwell, Iowa, 1889–1892; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893–95; Student, Leland Stanford Junior University, 1896; Acting Assistant Professor of History, University of Nevada, 1899–1901; B.A. (History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901–06; Secretary Nevada Historical Society, 1904–; Professor of History, 1907–.

PETER FRANDSEN

Professor of Biology

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895–96; A.B., Harvard University, 1898; A.M., 1899; Tutor and Assistant in Zoology, Harvard University, 1898–99; Graduate Student, Harvard University, 1899–1900; Assistant in Zoology, Harvard University and Radcliffe College, 1899–1900; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900–02; Associate Professor of Zoology and Bacteriology, 1902–03; Professor of Zoology and Bacteriology, 1903–06; Professor of Biology, 1906–.

PATRICK BEVERIDGE KENNEDY

Professor of Botany, Horticulture, and Forestry

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900–; Associate Professor of Botany and Horticulture, University of Nevada, 1900–02; Professor of Botany, Horticulture, and Forestry, 1902–.

GEORGE J. YOUNG

Professor of Mining and Metallurgy

B.S., College of Mining, University of California, 1899; Analytical Assistant, Mining Department, University of California, 1899–1900; Student of Economic Deposits, and Mining and Metallurgical Practice in the Field during summer months, 1900, Bodie District, California; 1901, in Utah, Colorado, California; 1902, in Utah and Montana; 1903–04, in Nevada and California; Assistant Professor of Metallurgy, University of Nevada, 1900–02; in charge of Nevada State Mining Laboratory, 1900–; Member of American Institute of Mining Engineers, 1900–; Professor of Mining and Metallurgy, University of Nevada, 1902–.

SAMUEL BRADFORD DOTEN

Professor of Entomology

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898–1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900–05; Instructor in Mathematics and Entomology, 1900–02; Assistant Professor of Mathematics and Entomology, 1902–03; Assistant Professor of Entomology, Meteorology, and Mathematics, 1903–05; Principal of the University High School and Teacher of Mathematics, Consulting Entomologist, and Meteorologist, Nevada Agricultural Experiment Station, 1905–06; Entomologist, Experiment Station, and Professor of Entomology, 1906–.

ROMANZO ADAMS

Professor of Education and Sociology

Teacher, Public School, Bloomingdale, Wisconsin, 1886–87; Marshalltown, Iowa, 1887–88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892–94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology and Principal of the Normal Department, Western College, Iowa, 1898–1900; Graduate Student, University of Chicago, 1900–02; Fellow in Sociology, University of Chicago, 1901–02; Professor of Education and Sociology, University of Nevada, 1902–; Ph.D. (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905–; Executive Committee, N. E. A., 1900–.

GORDON HAINES TRUE

Professor of Agriculture and Animal Husbandry

B.S., University of Wisconsin, 1894; Instructor in Dairy Husbandry, Michigan Agricultural College, 1894–99; Professor of Animal Husbandry, University of Arizona, 1899–1903; Chairman Executive

ment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1907–.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–03; Graduate Student and Reader, University of Chicago, June, 1903—June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904—September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905—September, 1905; Fellow in English, University of Chicago, June, 1906—September, 1907; Professor of the English Language and Literature, University of Nevada, 1907–.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888—August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891—January, 1892; Instrumentman, Memphis Artesian Water Company, January—September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; with Engineering Department Sanitary District of Chicago, June, 1894; December, 1896, on Topographic Surveys and in charge of Cement Testing Laboratory; miscellaneous engineering work, Chicago, January—August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897—August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901—March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January—August, 1905; Superintendent, Fitzsimmons & Connell Company (bridge substructure), August—December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer, in charge branch canal projects, Sanitary District of Chicago, January—August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.

Geology and Mineralogy, University of Nevada, 1907–; Fellow, Geological Society of America; Fellow, American Association for the Advancement of Science.

RALPH SMITH MINOR

Professor of Physics

A.B., Hamilton College, 1898; Root Fellow in Science, University of Freiburg, 1898–99; A.M., Hamilton College, 1901; University of Gottingen, 1899–1902, Ph.D., 1902; Science Teacher, Little Falls High School, 1902–03; Instructor in Physics, University of California, 1903–1906; in charge Physics Department, University of California, Summer Session, 1906; Associate Professor of Physics, University of Nevada, 1906; Professor of Physics, 1907–.

MAXWELL ADAMS

Professor of Chemistry

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890–91; A.B. (Chemistry), Stanford University, 1895; A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in Chemistry, Leland Stanford Junior University, 1895–97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of Chemistry and Physics, State Normal School, Chico, California, 1897–1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900–01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900–06; Consulting Chemist to Diamond Match Company, 1901–06; Fellow, American Association for the Advancement of Science; Professor of Chemistry, University of Nevada, 1906–.

HAYWARD H. HOWE

Professor, and Principal of the High School

Graduate of the Mount Pleasant (Iowa) High School and Normal Institute; Principal of the Auburn (California) High School, 1863–65; Principal of the Sacramento Grammar School, 1865–69; Principal, Gold Hill (Nevada) High School, 1869–1871; Principal of the Sacramento High School, 1871–72; Principal, Carson City High School, 1872–1906; Professor and Principal of the High School, University of Nevada, 1906–.

WINFRED BERDELL MACK

Professor of Bacteriology and Veterinary Science

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904–1905; Assistant in Pathology and Bacteriology, Cornell University, 1905–06; Veterinarian and Bacteriologist, Nevada Agricultural Experi-

ment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1907–.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–03; Graduate Student and Reader, University of Chicago, June, 1903—June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904—September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905—September, 1905; Fellow in English, University of Chicago, June, 1906—September, 1907; Professor of the English Language and Literature, University of Nevada, 1907–.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888—August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891—January, 1892; Instrumentman, Memphis Artesian Water Company, January—September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; with Engineering Department Sanitary District of Chicago, June, 1894; December, 1896, on Topographic Surveys and in charge of Cement Testing Laboratory; miscellaneous engineering work, Chicago, January—August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897—August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901—March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January—August, 1905; Superintendent, Fitzsimmons & Connell Company (bridge substructure), August—December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer, in charge branch canal projects, Sanitary District of Chicago, January—August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.

ERNEST WHITNEY MARTIN

Acting Professor of Latin and Greek

A.B., University of Chicago, 1900; A.M., Leland Stanford Junior University, 1902; Special Student in Latin, Buchtel College, 1891–95; Instructor in Latin and Greek, Clarinda Academy, Clarinda, Iowa, 1895–96; Principal of High School and Teacher of Classics, Clarinda, Iowa, 1896–98; U. S. A., Company M, I. V. I., serving in Philippine Islands, 1898–99; Student, University of Chicago, summer, 1896; summer, 1897; fall, winter, 1899–1900; Graduate Student, University of Chicago, spring, 1900; summer, 1904; Graduate Student, University of Berlin and American School of Classical Archæology, Rome, 1900–01; Fellow in Latin, Leland Stanford Junior University, 1901–02; Instructor and Graduate Student in Latin and Greek, 1902–05; Assistant Professor of Latin, 1905–; Acting Professor of Latin and Greek, University of Nevada, 1908–.

LOWE ABEEL McCLURE

Professor of Military Science and Tactics

Graduate, United States Military Academy, 1904; commissioned Second Lieutenant of Infantry, June 15, 1904; served with the 15th Infantry for two years in the Island of Mindanao, P. I., and three years with the same regiment in the United States; Professor of Military Science and Tactics, University of Nevada, 1909–.

KATE BARDENWERPER

Assistant Professor of Domestic Science

Graduate, State Normal School, San Jose, California, 1880; Teacher, Public School, Carson City, Nevada, 1880–86; First Assistant, High School, Carson City, 1886–1894; Critic Teacher Training School, University of Nevada, 1894–99; Student, Leland Stanford Junior University, 1898–99; Student, University of California, 1900–01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S. (Domestic Science), 1901; Instructor in Domestic Science, University of Nevada, 1904–05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Domestic Science, University of Nevada, 1905–.

SANFORD CROSBY DINSMORE

Assistant Professor of Agricultural Chemistry

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903–05; Chemist, Nevada Agricultural Experiment Station, 1905–; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906–.

KATHERINE LEWERS

Assistant Professor of Freehand Drawing

Student, St. George's Art School, Glasgow, 1893–94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894–97; Student with Howard Helmick, Washington, D. C., 1897–99; received prize scholarship New York School of Design, 1900; Graduate of New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905–; Photographer, Nevada Agricultural Experiment Station, 1905–; Assistant Professor of Freehand Drawing, 1907–.

ACHILLES CALLOWAY GOUGH

Instructor in Mechanical Engineering

B.M.E., Kentucky State College, 1906; with H. F. Gough & Sons, Machine and Carriage Builders, Benton, Kentucky, 1893–1900 and 1902–04; with Fairbanks-Morse Company, Beloit, Wisconsin, summer, 1906–07; Instructor, Mechanical Engineering, Iowa State College, 1906–07; Instructor in Mechanical Engineering, University of Nevada, 1907–.

MRS. KATE CONGDON WOOD

Instructor in Vocal Music

Student, Northwestern Conservatory, Minnesota, 1891–92; Studied voice with A. W. Porter at Minneapolis, 1892–95; Solo work and private teaching, 1895–1904; Graduate, National School of Public School Music Methods, 1904; Supervisor of Music in High School and Grammar Schools of Elko, Nevada, 1904–06; Instructor in Vocal Music, University of Nevada, 1907–.

JAY ARNOLD CARPENTER

Instructor in Metallurgy

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1908–.

REUBEN CYRIL THOMPSON

Instructor in Latin

B.A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., Harvard, 1902; Instructor in Latin and History, High School, Boise City, Idaho, 1902–05; Professor in Latin, State Normal School, Albion, Idaho, 1905–08; Instructor in History and Civics, Idaho State Summer Normals, 1907–08; Instructor in Latin and Greek, University of Nevada, 1908–.

AMOS ARTHUR HELLER

Instructor in Botany, Horticulture, and Forestry

A.B., Franklin and Marshall College, 1892; A.M., 1897; Field Agent,

U. S. Department of Agriculture, 1892; Botanical explorations in Virginia, North Carolina, Texas, Hawaiian Islands, Idaho, 1893–96; Instructor in Botany, University of Minnesota, 1896–98; Chief of Vanderbilt Expedition of New York Botanical Garden to Porto Rico, 1898–99; in publishing business, Lancaster, Pennsylvania, 1900–01; Botanical explorations in California, 1902–07; Author of Catalogue of North American Plants, 3 editions; Editor of Muhlenbergia, 1900–; Author of some thirty botanical papers; Member of the Torrey Botanical Club of New York City, and of the Linnaean Society of Lancaster, Pennsylvania.

MILES BRYCE KENNEDY

Assistant in Chemistry

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1907–08; Assistant in Chemistry, 1908–.

EARL NEWTON CLINGMAN

Assistant in Mechanical Engineering

Stationary Engineer with Morrow Brothers, Chicago, Illinois, 1899–1901; with Chicago and Northwestern Railway, 1901–07; Assistant in Mechanical Engineering, University of Nevada, 1907–.

ELIZA HENRIETTA OVERMAN

Assistant in Biology

B.S., General Science, University of Nevada, 1908; Graduate Student, 1908–09; Assistant in Biology, 1908–.

ALICE EUNICE ARMSTRONG

Assistant Librarian

Assistant Librarian, Fresno Free Public Library, June, 1896; Librarian, October, 1896—June, 1905; Acting Librarian, University of Nevada, 1905–07; Assistant Librarian, 1907–.

LOUISE MARY SISSA

Assistant Registrar

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884–1892; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893–1901; House Mother, Rowland Hall, Salt Lake City, 1901–05; House Mother, Miss Head's School, Berkeley, California, 1905–06; Assistant Registrar, University of Nevada, 1906–.

CAROLYN M. BECKWITH

Secretary to the President

Assistant Office Secretary, 1902–03; Secretary to the President, 1904–.

MRS. A. E. KAYE

Mistress of Manzanita Hall

Mistress of Manzanita Hall, 1904–.

MRS. M. E. PORTER

Matron of University Hospital

Matron of University Hospital, 1907–.

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AFFILIATED ORGANIZATIONS

THE STATE MINING LABORATORY

STAFF

JOSEPH EDWARD STUBBS.....President
GEORGE J. YOUNG.....In Charge
W. S. TANGIER SMITH.....Geologist and Mineralogist
JAY ARNOLD CARPENTER.....Assistant
CAROLYN M. BECKWITH.....Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have them analyzed and assayed without cost. (Secs. 1402-1405, incl., Compiled Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that these must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens, or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be sent to the sender, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which it came and all other matters that may be beneficial touching the same."

In compliance with the above section, reports have been rendered, and a record book kept. In order to make reports as accurate as possible, it is suggested that citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning value.

In respect to the analytical and assaying work, the Department of Mining, which has been assigned this work by the President of the University, has adopted the following procedure: Specimens and samples are first carefully examined, and, if a quantitative analysis is necessary to determine the value, this is made. In all cases where the results of a preliminary examination are doubtful, a quantitative analysis is made. No quantitative work is done upon small hand specimens, unless for the purpose of identifying a mineral, as the results of such work are almost always misleading. Assays are made in duplicate and values determined. Reports are made as follows: Where the value of gold is above $5 per ton, "The gold assay value is above $5 per ton"; where the value is less than, but still in the neighborhood of, $5 per ton, "The gold assay value is less than $5 per ton"; where the gold exists in traces only, "Gold is present in traces only." A similar form of report is given in the case of silver and of combined gold and silver values. The State law provides that returns for gold and silver above $5 per ton in value shall read, "Test for gold" or "Test for silver." As the meaning conveyed by these terms is not well understood, the foregoing form of report was adopted as fulfilling the intentions of the law and at the same time being more intelligible to the prospector or other persons receiving the report. The accuracy of the quantitative work is of the same grade as that for rapid "commercial analyses," and is unchecked unless otherwise stated. Samples and specimens are examined in the order in which they are received.

Inasmuch as the work is subordinated to the work of instruction, returns upon samples and specimens are sent out sometimes after a considerable lapse of time. The Department endeavors to send out reports as soon as possible. The time varies from three to ten days after the receipt of samples.

Whenever possible, citizens who avail themselves of the privileges afforded them by this Act should send in ample quantities of material. This facilitates the examination and gives more trustworthy results than are obtained from small specimens. Samples in addition to hand specimens should be sent for examination. All samples and hand specimens should be distinctly marked with the name of consignee and wrapped separately, and a letter giving locality and other information should accompany them.

THE AGRICULTURAL EXPERIMENT STATION

THE BOARD OF CONTROL

The Hon. JOHN SUNDERLAND (1907-1911) Chairman.....Reno
The Hon. CHAS. B. HENDERSON (1907-1911).....Elko
The Hon. A. A. CODD (1909-1913).....Goldfield
The Hon. J. J. SULLIVAN (1909-1911).....Virginia City
The Hon. FRANK WILLIAMS (1909-1913).....Good Springs
Mr. GEORGE H. TAYLOR, Secretary.....Reno

STAFF

J. E. STUBBS, D.D., LL.D., Director.....Publications
P. BEVERIDGE KENNEDY, Ph.D.....Botany, Horticulture, and Forestry
PETER FRANDSEN, M.A.....Consulting Zoologist
GORDON H. TRUE, B.S.....Agriculture and Animal Husbandry
SAMUEL B. DOTEN, B.A.....Entomology
SANFORD C. DINSMORE, B.S.....Chemistry
WINFRED B. MACK, D.V.M.....Bacteriology and Veterinary Science
J. E. CHURCH, Ph.D.....Cooperative Observer in Climatology and Meteorology
A. A. HELLER.....Assistant in Botany, Horticulture, and Forestry
THEODORE W. CLARK.....Superintendent of Farm
Mrs. T. W. COWGILL, M.A.....Librarian
KATHERINE LEWERS.....Photographer
CAROLYN M. BECKWITH.....Stenographer

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated $15,000 annually for the support of an Agricultural Experiment Station in each State and Territory of the Union.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; entomology, espe-

cially in its economic relation to agriculture; in fact, the solving of all problems pertaining to agriculture which are or may be of importance to this State.

The results of the work of the Station are made public through bulletins and reports, which are sent free to all residents of the State who desire them.

ASSOCIATION OF UNIVERSITY ALUMNI

President.....JOHN W. WRIGHT, '05
Vice-President.....MARK KELLEY, '05
Secretary-Treasurer.....Mrs. FLORENCE H. CHURCH, '02

EXECUTIVE COMMITTEE

JOHN A. FULTON, '98 PETER FRANDSEN, '95

ASSOCIATION OF NORMAL ALUMNI

President.....Mrs. MARIAN EDMUNDS CAHLAN, '95
Secretary-Treasurer.....FRANCES E. WRIGHT, '94

UNIVERSITY ADDRESSES

SECOND SEMESTER, 1907-1908

COMMENCEMENT, 1908

Annual Baccalaureate Sermon, Sunday, June 7, 1908, by the Reverend Father Charles Adolph Ramm, of San Francisco, California: "Justice exalteth a nation, but sin maketh nations miserable." Proverbs, xiv, 34.

Annual Commencement Address, Wednesday, June 10, 1908, by George A. Harvey, editor or Harper's Weekly and The North American Review, of New York City: "The American Individual."

PRESENTATION OF THE STATUE OF JOHN WILLIAM MACKAY TO THE STATE AND TO THE UNIVERSITY OF NEVADA

Presentation Address by Clarence Hungerford Mackay.

Acceptance on part of the State by Denver S. Dickerson, Acting Governor.

Acceptance on the part of the University of Nevada by Oscar J. Smith, President of the Board of Regents.

Remarks by Francis G. Newlands, U. S. Senator from Nevada, and by Sam P. Davis, ex-State Controller.

DEDICATION OF THE MACKAY BUILDING FOR THE MACKAY SCHOOL OF MINES

Presentation Address by Clarence Hungerford Mackay.

Acceptance on the part of the Board of Regents by Oscar J. Smith, President of the Board of Regents.

Acceptance on the part of the University Faculty by George J. Young, Professor of Mining and Metallurgy.

Acceptance for the Alumni by Frank H. Norcross, '91, Judge of the Supreme Court of Nevada.

FIRST SEMESTER, 1908-1909

September 11—Honorable Horace G. Platt of San Francisco: "Character."

October 2—Judge William A. Seeds: "The University: What It Has Been, What It Is, and What It Shall Be if It Has Half a Chance."

October 9—P. R. Whytock of Rawhide: "Mines and Miners."

October 16—Services in memory of Hannah Keziah Clapp, formerly a professor and librarian in the University of Nevada, who died in Palo Alto on Thursday, October 8, 1908:

Professor Jeanne E. Wier: "Miss Clapp as a Nevada Pioneer."

Professor Kate Bardenwerper: "The Early Life of Miss Clapp as a Teacher at Carson."

Professor J. E. Church, Jr.: "Miss Clapp as a Teacher, from One of Her Later Associates."

The Honorable Sardis Summerfield: "The Influence of Miss Clapp as a Woman and as a Benefactor in the Babcock Memorial Kindergarten."

October 23—Judge A. E. Cheney: "The Right, the Duty, and the Privileges of Exercising the Elective Franchise—The Most Sacred Right of Citizenship."

December 11—Professor E. Whitney Martin: "College Spirit."

December 16—C. C. Van Liew, President of the Chico State Normal School, Chico, California: "The Value of Discipline."

SECOND SEMESTER, 1908-1909

February 12—The Honorable George D. Pyne of Goldfield: "Lincoln, the Statesman."

The Honorable Sam P. Davis of Carson City: "The Personal Character of Lincoln."

The Reverend Charles R. Brown, Pastor of the First Congregational Church of Oakland, California: "Lincoln."

The Honorable Clay Tallman of Rhyolite: "Lincoln and the Admission of Nevada."

April 16—President Joseph E. Stubbs: "The Library Building."

ORGANIZATION AND ADMINISTRATION

FOUNDATION

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko by a law approved March 7, 1873, but was removed to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University begins with the academic year 1886-87.

The State Normal School was authorized by an Act of the Legislature approved February 7, 1887, and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS

The University maintains the following Colleges and Schools, which aim to meet the best ideas and ideals of modern University life and training:

I. THE COLLEGE OF ARTS AND SCIENCE:
 1. The School of Liberal Arts.
 2. The School of General Science.

II. THE COLLEGE OF AGRICULTURE AND DOMESTIC SCIENCE:
 1. The School of Agriculture.
 2. The School of Domestic Science.

III. THE COLLEGE OF ENGINEERING:
 1. The Mackay School of Mines.
 2. The School of Mechanical Engineering.
 3. The School of Civil Engineering.

IV. THE STATE NORMAL SCHOOL.

V. THE UNIVERSITY HIGH SCHOOL.

REGENTS

The general management and control of the University is vested in a Board of Regents. The five members constituting this Board are elected by the people.

THE PRESIDENT

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be Chairman of the Academic Council and of the Executive Committee of the Academic Council, and ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, subject to the approval of the Academic Council and Board of Regents, appoint the Executive and other standing committees designated as administrative and as academic and shall name the chairmen of such committees.

THE VICE-PRESIDENT

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE REGISTRAR

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the students and the adminstrative and academic committees.

He shall prepare, subject to the approval of the President and the Executive Committee, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be secretary of the Council and shall keep a record of its proceedings.

THE ACADEMIC COUNCIL

The Academic Council consists of the President of the University, all professors and associate professors, the Registrar, the Librarian, such assistant professors as have been

upon the rolls of the Faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Regents, determine.

The Academic Council is vested with all of the powers and duties usually vested in the faculties of similar institutions.

All general University regulations, statutes, and rules as to the matters within the province of the Faculty, shall be initiated in and passed by the Academic Council, and shall be in force, subject to the power of disapproval in the Board of Regents and in the President of the University. However, no regulation, statute, or rule involving a change in the educational policy of the University in respect to the requirements of admission, the course of study, or the conditions of graduation, shall take effect as above until it shall have been submitted to the Board of Regents for their approval.

The Academic Council shall formulate the duties and control the policy of the several committees, excepting that appeals from the decisions of the several committees shall be made to the Executive Committee.

The Council shall recommend to the President of the University, and he to the Board of Regents, the candidates for graduation.

A majority of its members shall constitute a quorum of the Academic Council.

COMMITTEES

THE EXECUTIVE COMMITTEE

The Executive Committee, shall consist of the President, Vice-President, and five members of the Academic Council of the rank of Professor or Associate Professor. These members shall be appointed by the President of the University and approved by the Academic Council and the Board of Regents.

All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, and for the abolition of departments or chairs, shall be submitted by the President to the Executive Committee for approval before they may be submitted to the Board of Regents for its action.

In all cases, in presenting such matters to the Board of Regents, the President shall state whether or not they have the approval of the Executive Committee.

The Executive Committee shall advise the President concerning any other matters which he may choose to refer to it.

The Executive Committee shall assign not more than ten students of the Freshman and the Sophomore classes to a professor or an associate professor, whose duty it shall be to look after the habits of study and habits of life of any student placed under his care.

OTHER STANDING COMMITTEES

The other standing committees shall be grouped as follows:

Administrative—

1. Student Affairs.
2. Athletics.
3. Public Exercises.
4. Literary Contests.
5. Public Health.
6. Delinquent Scholarship.
7. Military Affairs.

Academic—

1. Group Electives.
2. Admission and Advanced Standing.
3. Registration.
4. Graduation and Theses.
5. Schedule of Recitations and Examinations.
6. University Publications.
7. Library.

(*a*) Standing committees shall be appointed by the President, subject to the approval of the Executive Committee and the Board of Regents.

(*b*) Standing committees shall be appointed annually, and shall enter upon their duties the first of January of each year.

SPECIAL COMMITTEES

Special committees may be appointed by the President of the University, to which the Academic Council may assign the consideration of any matter within its jurisdiction.

THE COLLEGE FACULTIES

The College Faculties shall have the directing of the educational policies in their respective colleges, and shall recommend to the Academic Council changes in the requirements of admission, the course of study, and the conditions of graduation.

ADVANTAGES AND EQUIPMENT

ADVANTAGES OF SITUATION

Reno, the seat of the University, is a thriving community of fifteen thousand inhabitants. It is situated in the beautiful Truckee Valley, at the junction of three railroads; namely, the Southern Pacific Railroad, a trunk line between the East and the West; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railroad. The imposing mountains which encircle the valley, the pure air and sunshine give the town an enviable reputation for health and beauty. The numerous churches are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. The proximity of Reno to the famous Comstock Lode, the mines of Tonopah and Goldfield, and the copper mines of eastern Nevada, enables the School of Mines to offer a large amount of practical training in mining operations.

FUNDS

The endowments and appropriations on which the University has been founded and maintained are the following:

1. The donation of 21.15 acres of land by the Central Pacific Railroad, and the erection of a building in 1873-74 by the citizens of Elko at a cost of more than eighteen thousand dollars.
2. When the University was removed to Reno by an Act of the Legislature in 1885, the Board of County Commissioners of Washoe County paid to Elko County $20,000 and to the Board of Regents $5,000 to be expended in purchasing a site at Reno.
3. The fund derived from the Congressional Land Grant of July 2, 1862, the interest of which is included in the biennial appropriation.
4. Various appropriations by the State Legislature for buildings and other specified purposes.
5. The biennial appropriation by the State Legislature for the support of the University.
6. The Agricultural Experiment Station Fund *for research only* of $24,000 a year.
7. The Morrill College Fund of $30,000 a year for Agri-

culture and Mechanic Arts, apportioned to the College of Agriculture and the College of Engineering.

8. The gift of the farm to the University by the citizens of Washoe County for the benefit of the Agricultural Experiment Station. This farm consists of sixty acres of good land near the University and is entitled to ninety inches of water annually. It is worth now at least $40,000.

BUILDINGS AND GROUNDS

The University Campus has an area of forty-nine acres. It is beautifully located on an eminence overlooking the city. There are thirteen buildings now in use.

Morrill Hall is a three-story brick building with a large basement. The Library occupies the entire basement. The administrative offices of the President of the University and the Department of Mathematics occupy the first floor. The Departments of Ancient Languages and History occupy the second floor. The Commercial Department and the Department of Drawing occupy the third floor.

Stewart Hall is also a three-story and basement structure. In the basement are the rooms of the Department of Domestic Science and the office of the Superintendent of Buildings and Grounds. The first floor is occupied by the Educational, Modern Language, and English Departments, and by the Experiment Station Library. The second floor is devoted to the use of the University High School. The third floor is occupied by the Station Laboratory of the Botanical Department, and by the Department of Civil Engineering.

Hatch Station is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the Departments of Agriculture, Entomology, and Meteorology. The second floor is given to the Departments of Biology, and Veterinary Science, and Bacteriology. The third floor is occupied as a general Biological Laboratory and contains the Photographic Laboratory.

The Mackay Mining Building, the recent gift of Clarence H. Mackay, is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and a library occupy the space between the wings. The first floor contains the geological lecture room, office, and

laboratory; the chemical laboratory, weighing rooms, library, and drafting-room; the geological museum, assaying laboratory, and metallurgical and mining laboratory; the second floor, the mineralogical and research laboratories, mining lecture room and offices.

The ground floor of the Mechanical Building contains the machine shop, the blacksmith shop, and the boiler room. The machine shop is furnished with screw-cutting lathes, a polishing lathe, a shaper, a universal milling machine, a universal cutter grinder, bench vises, wet and dry emery wheels, alternating and direct current dynamos, and a tool room equipped with small machine tools and experimental apparatus for the use of mechanical engineering students. The blacksmith shop has forges and the necessary tools. The second floor accommodates the wood-working shop. This shop is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools.

The Department of Physics occupies a substantial two-story brick building. The first floor contains the laboratories, storeroom, and shop. The second floor contains a lecture room, an apparatus room, and an office.

The Chemistry Building is a commodious stone building. On the first floor is located the laboratory for qualitative analysis and general chemistry, and the laboratory for quantitative analysis. On this floor are also stockrooms, balance rooms, and a laboratory for special work. On the second floor is a lecture room, the Experiment Station laboratory, a large stockroom, a room for preparing apparatus for demonstration of experiments before classes, an office and a suite of rooms which will be furnished for an organic laboratory. In the basement is a large acid and chemical room and the boiler room.

The State Legislature, recognizing the importance of placing the benefits of the University within the reach of all the deserving young men and women of the State, authorized the building of two student halls, after the plan of such halls in use by students of the larger Eastern colleges, and appropriated thirty-five thousand dollars for the purpose. The first of these two buildings is known as Lincoln Hall. It is a tasteful and comfortable home for one hundred young men. The plans of Lincoln Hall were drawn after a careful study

of the best modern college halls, and meet every requirement of a cultivated taste.

The second building, known as Manzanita Hall, is a delightful home for young women. It is located upon the plaza in the southwest part of the Campus, and overlooks the town and the valley. The construction material is brick and granite. The architectural features are those of a commodious private dwelling. Besides the single and double rooms, which are sufficient for forty young women, there is a reading room and a parlor for the students and a private parlor and sitting room for the Mistress of Manzanita Hall. By the opening of the term in September, it is hoped that there will be completed an annex to Manzanita Hall. This annex will accommodate thirty-five students.

The Gymnasium is a modern structure 60 feet wide and 120 feet long. It is equipped both as an armory for the use of the Military Department and as a gymnasium for athletic training. The equipment is modern and ample for all college purposes. Convenient toilet rooms with hot and cold water and lockers for the use of all students are provided. The Gymnasium, on account of its convenience and size, is used as a hall for General Assembly and the more important University functions.

The home of the President is situated on the southeast corner of the Campus. It is colonial in the general style of its architecture and is a fine, commodious home, an ornament to the University. It was built at a cost of $9,418.70. The ground upon which the house is built was leased by the Regents of the University, but when the Legislature appropriates the money to pay for the cost of building, the house becomes the property of the University.

Between the Gymnasium and Lincoln Hall is situated the University Hospital. This is a one-story brick building and contains six rooms. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. Students may have any physician whom they prefer.

THE MACKAY FIELD

The natural amphitheater on the Campus, which had been leased to the University for a number of years by the late Regent Evans, was purchased for the University by Mr. Clarence H. Mackay and provision made for its improve-

ment. In order to make room for other branches of athletics, such as basket-ball and tennis, the Nevada Legislature of 1909 made provision for the purchase of additional land to the south of the old field, so that now about ten acres of land is being used for athletic purposes. The improvements donated by Mr. Mackay include a Training Quarters Building, situated on the east side of the field. This building has showers, baths, locker and dressing rooms, a committee room, and a lounging room. Directly opposite to this on the west bank are the bleachers and colonnade. The natural slope of the bank has been utilized so that the field will closely resemble the stadium used at the ancient Olympian games. There will be seventeen tiers of concrete with a colonnade for a covered grandstand in the rear. The seating capacity will be about two thousand.

Situated between these structures is a full-sized Rugby football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard dash.

LIBRARIES AND LABORATORIES

The University Library is located in the basement of Morrill Hall. It contains fourteen thousand bound volumes, and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works and reference works of various kinds. The books are catalogued according to the Dewey Decimal Classification System. The reading room is supplied with daily and weekly papers, and with many of the best scientific and literary periodicals. The library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. To the general public is extended the use of the library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students.

The Agricultural Experiment Station Library of nearly sixteen hundred bound volumes and a large number of pamphlets, is on the main floor of Stewart Hall. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, general works on agriculture and related sciences, and on irrigation, and herd books of livestock asso-

ciations. Many current agricultural periodicals are on the tables in the reading room. The library is catalogued and classified, and suited for ready reference. It is open daily, and while intended primarily for the use of the Station Staff, it is also accessible to the public.

The work of the Physical Laboratory is carried on along four distinct lines, each with its separate rooms and its own special equipment. The general laboratory contains a Laboratory for High School Physics, with an equipment permitting a section of forty-eight students to work simultaneously on the same exercise; a Freshman Laboratory for work in mechanics and heat; a Sophomore Laboratory for work in sound, light, magnetism, and electricity; and a shop.

The equipment of the Freshman and Sophomore Laboratories, which is entirely new, consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the work.

Aside from the main laboratories there is a separate room for experiments in heat; a weighing room, containing four Becker balances for general use; a photographic darkroom; and a department library and reading room, which is also available for student use while writing up the laboratory exercises.

The department shop will contain a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular and linear dividing engine, and a direct current dynamo with two armatures, furnishing current at various voltages.

All of the laboratories will be supplied with water, gas, and electricity.

Laboratory for Quantitative Analysis—This laboratory accommodates thirty-six students. It is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

Laboratory for Qualitative Analysis—This laboratory will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The

laboratory is completely fitted with water, gas, and fume closets.

Experiment Station Laboratory—In this laboratory those students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

General Biological Laboratory—This laboratory is used by the elementary classes in Zoology, Botany, and Hygiene. It is equipped with dissecting tables, trays, sinks, compound microscopes, dissecting microscopes, microtomes, mounting materials, chemicals, balances, etc.

Histological and Embryological Laboratory—This laboratory is equipped with all the necessary apparatus for doing general or research work in these subjects.

Bacteriological Laboratory—This laboratory has also been recently fitted up with new apparatus for research in Pathology and Bacteriology. It is used chiefly for Experiment Station work, but is available for demonstration purposes for students taking elementary Bacteriology, and can accommodate a few students who desire to do more advanced work.

Station Botanical Laboratory—This laboratory is also used by advanced classes in Botany and Horticulture.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in Entomology. It contains also the Photographic Laboratory of the Experiment Station.

The Department of Geology and Mineralogy is housed in the Mackay Building, and is provided with laboratories for both Geology and Mineralogy, with reference collections illustrating the minerals, rocks, and fossils; and with class collections for study and determination. The Mineralogical Laboratory is arranged, for the present, for the accommodation of single sections of forty students. There is, in addition, a laboratory fitted up for microscopic work, equipped with petrographical microscopes and the necessary accessories. It has also a set of mineral thin sections cut in definite direction, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. A separate grinding room is provided with apparatus for making thin sections of rocks and minerals. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides furnishes additional illustrative material for lecture work.

Mining and Geological Museum—One of the north wings of the Mackay Mining Building is used as a Museum for Mining, Geology, and Metallurgy. The floor space for this purpose is 2,880 square feet. The room is lighted by a large skylight extending the full length of the Museum. Four lines of cases occupy the floor, and the wall-cases the sides of the room. Beneath the glass show-part of the cases are sets of drawers for the storage of class collections. All cases are of dust-proof construction, of quarter-sawed oak, and provided with plate glass.

The collections at present embrace a very complete collection of ores and minerals from different parts of the State; three complete petrographical collections; a partial metallurgical collection, and the beginning of a mining exhibit.

Mining Library—All reference books, text-books, technical journals, and works pertaining to geology and mineralogy, mining, metallurgy, and engineering are concentrated in one large study room which is conveniently located upon the ground floor of the building. This library is open at all times during the sessions.

Chemical Laboratory—The Chemical Laboratory is fully equipped with the usual desks, sinks, hoods, hot-plates, and air-baths. Each desk is provided with gas, compressed air, and electricity. Steam connections are provided for drying coils and still. Electric air-baths and drying pans are provided for overnight work. A small electric-driven, five-jar, Abbe mill is in use for fine grinding tests. Four four-gallon slime agitators, driven by small electric motor, are used for slime tests. A direct connected, electric-driven exhaust fan draws the air from the hood in the parting room and from this laboratory. Next semester it is proposed to install a complete electrolytic outfit for lead, copper, and other determinations. The laboratory will accommodate sixteen students.

Weighing Room—Connected with both the Chemical Laboratory and the parting room is the weighing room. Substantial piers carry the balances. Both chemical and bead balances for assaying work are placed in this room. The equipment consists of two analytical balances and seven bead balances. Different makes of balances are in use, such as the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger.

Parting Room—The cleaning of beads, parting, and ignitions are provided for in a separate room, convenient to the weighing room and Assaying Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

Assaying Laboratory—The preparation of crucible charges and all furnace work is done in the Assaying Laboratory. This laboratory is equipped with six Thompson pulp scales, three double-muffle, soft coal furnaces, three large oil fusion furnaces, four small oil-fired muffles, two coke muffle furnaces, and one coke fusion furnace. Crude oil and distillate are used for the oil furnaces, compressed air being used to spray the oil. The laboratory will accommodate twenty students.

Metallurgical and Mining Laboratory—The metallurgical equipment includes the following machinery, all of commercial size: a three-stamp battery and feeder, amalgamating plates on steel table, a four-foot Union concentrator, a Wifley concentrating table, a two-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of one ton capacity, a 3x8 roasting furnace, an eighteen-inch amalgamating pan, a sample crusher, and sample grinder.

The mining machinery equipment consists of an Ingersoll-Sergeant drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any mesh coarser than a 40 screen; coarse and fine concentration of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls—the roasting furnace enabling ores to be given a chloridizing or an oxidizing roasting before treatment in the vats—and, finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-h.p. and a 5-h.p. induction motor drive all the machinery through separate line shafts.

Storerooms—Two large storerooms are placed in the basement, convenient to the laboratories on the ground floor. Conveniences are arranged for the storage of chemicals, clayware, glassware, miscellaneous apparatus, and ores. A verti-

cal 5-h.p. boiler supplies steam for drying purposes to both the Chemical and the Metallurgical Laboratories.

Steam and Gas Laboratory—The equipment includes two steam engines, one gas engine, three steam-engine indicators, one gas-engine indicator, Alden dynamometer, planmeters, speed indicators, gages, Crosby gage-tester, calorimeter, gas analysis outfit, pyrometer, and other pieces of apparatus essential in making tests on steam and gas machinery.

Electrical Laboratory—The equipment consists of one direct and one alternating current generator, one direct and three alternating current motors, three transformers, one Queen portable testing set, four voltmeters, six ammeters, three wattmeters, three multipliers, rheostats, and numerous other smaller pieces of apparatus.

Civil Engineering Laboratory—During the year 1909 a 200,000-lb. capacity Riehle testing machine is to be purchased and installed for the testing of materials and to illustrate to the students of engineering the principles of the strength and elasticity of materials used in engineering work. This machine will be automatic and autographic and up-to-date in every respect.

SCIENTIFIC COLLECTIONS

One wing of the Mackay Building is devoted to a Museum, in which the collections of the Departments connected with the School of Mines may be suitably housed and exhibited. These include, besides general material, the nucleus of a collection illustrating the mineral resources of the State of Nevada, and specimens for comparison from other important mining regions. It is intended to build up, as soon as possible, a systematic collection of rocks, minerals, fossils, and economic specimens, so labeled as to furnish as much information as possible to the general public, as well as to the student. There is also planned a mining collection, illustrating historically various types of mining machinery and appliances, mine models, etc.

The Experiment Station has made a small collection of bird skins representing a majority of the species found in the State. A beginning has also been made in collecting the rodents of the State, mammal skeletons, alcoholic specimens, etc. Mr. F. J. Steinmetz of Carson City donated his valuable private collection of birds' eggs and nests to the University.

The very complete Station Herbarium is also used for Uni-

versity purposes. A small beginning has been made in the collection of the lower cryptogamic forms of plant life.

PUBLIC LECTURES

A general assembly of all the students of the University and all the members of the Faculty is held every Friday. This is the lecture service of the week, and is under the special direction of the President of the University. These weekly lectures are given by members of the Faculty and by men and women of special eminence in particular fields of study, travel, and business enterprise.

Lectures on various subjects by members of the Faculty of the University and Staff of the Agricultural Experiment Station will be given at different points in the State as arrangements can be made between the local communities and the University.

GIFTS TO THE UNIVERSITY

The gift by Clarence H. Mackay of six acres at a cost of three thousand dollars, and the fitting up of this land, at a cost of fifteen thousand dollars, into a first-class athletic field.

The building of a training quarters, and a grandstand, and colonnade by Mr. Mackay, at a cost of thirty thousand dollars.

The gift of one thousand dollars by the student body for the fitting up of two out-of-door basket-ball courts.

The subscription by the Alumni of one thousand dollars for two tennis courts.

NEEDS OF THE UNIVERSITY

1. Among the needs of the Library is a library building to cost with furnishings $20,000. The present space allotted to the Library, the basement of Morrill Hall, is inadequate. New books are rapidly accumulating, and during the last two years seven new book-stacks have been required. It is difficult to see where any more stacks can be placed in the present stackroom to meet the needs of the constant growth. Hence a new and larger abode for the Library is needed. Moreover, there should be a building especially designed and adapted to the needs of a library, prominent among which is a sufficient amount of light, which is not obtained in the basement. The book-stacks are necessarily large, and hence shut off the light from the windows, the Librarian frequently being

obliged to use the light of a match in order to find a book. The new Library building should provide for the admission of light from above, through skylights, which would insure the diffusion of a good light throughout the library. Another fact contributing to the need of a new building is the danger of fire in the present library. If the books were burned, some of them could not be replaced.

2. A biological building and museum for the use of the Department of Biology, the museum wing of this building to be used for the scientific collections in natural history so that they can be made available to students and to the public.

3. Scholarships. The friends of education, and particularly the friends of the University, are urged to consider the founding of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a university course, but whose financial resources are inadequate to obtain it for them. The University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands made upon it. No means of perpetuating a healthful and elevating influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the growing centuries.

4. An endowment of professorships in the University. The sum of $50,000 will provide an adequate endowment for a chair in the University, the interest of this endowment fund going to pay the salary of the professor of the special department.

STUDENT AFFAIRS

GOVERNMENT OF THE STUDENTS

In the government of the University the largest liberty consistent with good work, good order, and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or the unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of University life are advised to remain at home or go elsewhere.

STUDENT ORGANIZATIONS AND PERIODICALS

The students have established fraternities, literary societies, the Crucible Club for engineering students, a Young Women's Christian Association, and the Associated Students, who direct athletics and debating and promote concert of action on the part of the students.

The students publish a weekly newspaper known as the *Student Record.* Each Junior Class publishes an edition of the Junior annual known as the *Artemisia.*

PHYSICAL TRAINING AND ATHLETICS

The University is provided with an excellent gymnasium, and, beginning with the fall term of 1909, two directors, one for the men and the other for the women, will be in charge of the Department of Physical Training.

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. Rugby football, baseball, track, basket-ball, and tennis are the games of special prominence at the present time. The policy of the University is to foster the spirit of honor and gentlemanliness in athletics, to suppress evil tendencies, and to see to it that athletic sports shall not encroach upon the claims of scholarship.

To represent the University of Nevada in any public contest, a student must conform to the following rules:

SECTION I

RULE 1. He must be an amateur.

RULE 2. If a candidate for a degree, he must attend regularly all the exercises of his class.

RULE 3. If a special student, he must give evidence of good faith regarding his intention to remain a full year in the University. He must also take courses amounting to not less than fifteen hours a week and attend regularly the exercises in such courses.

RULE 4. Like other students, he must maintain satisfactory standing in his class. A student who does not maintain a satisfactory standing in one school of the University cannot, by entering another, alter his status as regards these rules.

RULE 5. He must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

RULE 6. He must pass a physical examination satisfactory to the Committee on Athletics.

SECTION II

RULE 1. Schedules for all games must be submitted to the Committee on Athletic Sports and approved by them.

RULE 2. A similar approval is required in the case of every individual intending to represent the University of Nevada in any single contest.

MILITARY SCIENCE AND TACTICS

1. Appreciation of the advantages of military drill and training in the education of the youth is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, and instils habits of obedience to lawful authority. A general knowledge of the system of national defense, of the organization of the Army and of the Navy, and their relation to the civil power, is considered essential to intelligent suffrage.

2. The department is in charge of an officer of the United States Army, detailed by the War Department as Professor of Military Science and Tactics, and as Commandant of Cadets.

3. Students receiving military instruction are designated "Cadets," and are organized into a battalion of infantry, officially designated as "The University of Nevada Battalion of Cadets."

4. The Battalion of Cadets is composed of all male students of the University, including those in the Preparatory, Commercial, Normal, and Special classes, with the following exceptions:

a. Students physically disqualified permanently. Those temporarily disqualified may be given light duty in the Signal Corps Detachment.

b. Students twenty-seven years of age or over.

c. Students who previously have had the military training required by the War Department.

d. The Battalion has its band. The students serving in this band are excused from other military duties. Ordinarily no cadet will be assigned to the band until he has satisfactorily completed the "schools of the squad, soldier, and company."

5. Cadets are required, upon entrance, to provide themselves with a uniform of prescribed design, consisting of blouse, trousers, cap, black shoes, white gloves, together with the insignia appropriate thereto.

6. Cadets will wear the uniform at all times while receiving military instruction.

7. The wearing of composite uniform is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

8. Appointments in the Battalion shall be determined by:

a. Military ability, which shall be decided from a careful consideration of the following points:

1. Character.
2. Attendance.
3. Military conduct.
4. Zeal.
5. Soldierly bearing.
6. Aptitude for command.
7. Knowledge of drill and other duties as determined by examination and practical application.
8. Recommendation of superior officers.
9. Standing in Department of Physical Culture.

b. Class standing.

c. Length of service in the Battalion.

Generally the commissioned officers are taken from the Senior class, the sergeants from the Junior class, the corporals from the Sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

10. Every cadet who is a candidate for graduation from any of the schools of the University will be required to complete the prescribed course of military instruction, aggregating 14 units. Other cadets will receive an amount of military training proportionate to the length of their attendance at the University.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military service, will be forwarded to the War Department and to the Adjutant-General of the State.

13. The punishments to which cadets are liable, are:

a. Suspension of privileges. Private reprimand.

b. Suspension from the University. Reduction to ranks.

c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Commandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensable to discipline. Military authority will be exercised at all times, with firmness, kindness, and justice; superiors are forbidden

to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to perform the prescribed military duties unless excused in advance by the President or the Commandant. In case of absence without previous excuse, a written explanation will be submitted upon resuming duty. In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to all of the University schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; provided, they are at least twenty years of age. The Committee on Admission and Advanced Standing, in consultation with the adviser, may grant exceptions to this rule for adequate reasons. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University

examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high school teachers and members of the Faculty concerned with accrediting will be held each year on the day preceding the Academic meet.

ADMISSION REQUIREMENTS

Subjects and Credits

GROUP I

1. English (a)	1 unit*
English (b)	1 unit
English (c)	1 unit
2. Mathematics—Algebra (a)	1 unit
Mathematics—Algebra and Plane Geometry (b)	1 unit
Mathematics—Plane Geometry (c)	1 unit
3. Physics	1 unit
4. History (a or b)	1 unit
History (c)	1 unit
5. Latin (a)	1 unit
Latin (b)	1 unit
Latin (c)	1 unit
Elective	2 units

*A unit, as the measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Three units represent daily recitations throughout three years; one-half unit, a half year's work with daily recitations. A total of fourteen units is required.

GROUP II

1. English (a)	1 unit*
English (b)	1 unit
English (c)	1 unit
2. Mathematics—Algebra (a)	1 unit
Mathematics—Algebra and Plane Geometry (b)	1 unit
Mathematics—Plane Geometry (c)	1 unit
3. Physics	1 unit
4. History (a or b)	1 unit
History (c)	1 unit
7-8. German or French (a)	1 unit
German or French (b)	1 unit
Elective	3 units

ELECTIVES FOR GROUPS I AND II

1. English (d)	1 unit
2. Mathematics—Solid Geometry (d)	½ unit
5. Latin	1 unit
10. Chemistry	1 unit
11. Physical Geography	½ or 1 unit
12. Botany	½ or 1 unit
13. Zoology	½ or 1 unit
14. Physiology	1 unit
15. Bookkeeping	½ unit

GROUP III

1. English (a)	1 unit
English (b)	1 unit
English (c)	1 unit
2. Mathematics—Algebra (a)	1 unit
Mathematics—Algebra and Plane Geometry (b)	1 unit
Mathematics—Plane Geometry (c)	1 unit
Mathematics—Solid Geometry (d)	½ unit
3. Physics	1 unit
4. English History (a)	½ or 1 unit
Ancient History (b)	½ or 1 unit
American History and Civics (c)	1 unit
5. Latin (a)	1 unit
Latin (b)	1 unit
Latin (c)	1 unit
6. Greek (a)	1 unit

*A unit, as the measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Three units represent daily recitations throughout three years; one-half unit, a half year's work with daily recitations. A total of fourteen units is required.

Greek (b)	1 unit*
7. German (a)	1 unit
German (b)	1 unit
8. French (a)	1 unit
French (b)	1 unit
9. Spanish (a)	1 unit
Spanish (b)	1 unit
10. Chemistry	1 unit
11. Physical Geography	½ or 1 unit
12. Botany	½ or 1 unit
13. Zoology	½ or 1 unit
14. Physiology	1 unit
15. Bookkeeping	½ unit
16. Shopwork	1 unit
17. Drawing	½ unit

Group I admits to the Schools of Liberal Arts and General Science, and to the Normal School, advanced course. For entrance to the Normal School, elementary course, the applicant may offer Group I without the electives, or Group II with one unit elective, making twelve units in all.

Group II admits to the School of General Science.

Group III admits to the Schools of Engineering. For entrance to the Engineering Schools the candidate must present subjects 1, 2, 3, 4c, 10, and 4½ additional units selected from the subjects 4a, 4b, and 5 to 17, inclusive.

Description of Admission Requirements

1. ENGLISH (4 units)

The requirement in English includes both the study of the literature listed in Groups I—V and the work in grammar, composition, and rhetoric outlined below.

LITERATURE

I. Ivanhoe, Silas Marner, and the Vicar of Wakefield, or Henry Esmond; and for outside reading, any six of the following: The Talisman, The Three Musketeers, Treasure Island, The Last of the Mohicans, The Jungle Book, Quentin Durward, Rob Roy, The House of the Seven Gables, The Tale of Two Cities, Lorna Doone, Emma, Oliver Twist, The Christ-

*A unit, as the measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Three units represent daily recitations throughout three years; one-half unit, a half year's work with daily recitations. A total of fourteen units is required.

mas Carol, Pilgrim's Progress, With Fire and Sword, The Cloister and the Hearth, The Newcomes, Les Miserables, The Crisis, The Virginian.

II. The Merchant of Venice, Julius Cæsar, Macbeth.

III. Vision of Sir Launfal, The Chambered Nautilus, Thanatopsis, The Deserted Village, The Cotter's Saturday Night, Gray's Elegy, The Ancient Mariner, L'Allegro, Il Penseroso, Gareth and Lynette, or The Passing of Arthur, The Princess, and any of the two following: Michael, The Rape of the Lock, Childe Harold, Canto IV, Chaucer's Prologue, Lays of Ancient Rome; selections from Wordsworth, Shelley, Keats, and Arnold.

IV. The Alhambra, The Great Stone Face, The Ambitious Guest, The Gold Bug, The Purloined Letter, and for outside reading any two of the following: Hamlin Garland's Main Traveled Roads; Bret Harte's The Luck of Roaring Camp; London's The Call of the Wild; Kipling's The Day's Work; Maupassant's The Coward, The Piece of String, The Necklace; The Book of Ruth.

V. Franklin's Autobiography, or Thoreau's Wild Apples; Addison's Sir Roger de Coverly, or Carlyle's Essay on Burns, or Holmes' Autocrat of the Breakfast Table; Burke's Speech on Conciliation, or Webster's Bunker Hill Oration.

GRAMMAR, COMPOSITION, AND RHETORIC

The aim of the course should be to train in correct expression and effective presentation of simple exercises in description, narration, and exposition. A simple text-book in rhetoric should be used. A brief review of grammar should be made in the first year, and this should be followed up in the last year by a review, covering the principles presented in Whitney's Essentials of Grammar, or MacEwan's Essentials of the English Sentence.

2. MATHEMATICS (3½ units)

(*a and* ½*b*) Algebra (1½ units). Through quadratic equations. Thorough mastery of the fundamental processes of addition, subtraction, multiplication, and division. Equations of the first degree, simple and simultaneous, factoring, common divisors and multiples, fractions, fractional equations, theory of exponents, radicals, and the solution of quadratic equations.

(½*b and c*) Plane Geometry (1½ units). The material offered in the first five books of Beman and Smith's Plane

and Solid Geometry, or its equivalent. The solution of original exercises, including applications to mensuration.

(*d*) Solid Geometry (½ unit). The topics included are: Relations of lines and planes to space; the properties of prisms, pyramids, cylinders, and cones; the sphere and spherical triangle; also the mensuration of solids and original propositions.

3. PHYSICS (1 unit)

The requirement represents at least a daily exercise during one school year, which falls within the last two years of preparation for college. The course should cover the amount of material offered in any of the best modern text-books of Elementary Physics, such as Carhart and Chute's High School Physics, or the First Course in Physics by Millikan and Gale. The instruction should be based upon laboratory work by the student, performed under the teacher's supervision, and classroom demonstration by the teacher. The student's laboratory note-book should be presented to the Department of Physics at the time of entrance.

4. HISTORY (3 units)

(*a*) English History (1 unit). A knowledge of the important epochs is required. Larned's History of England indicates approximately the ground to be covered. The main purpose of the requirement is to prepare for the intelligent study of English literature, therefore constant reference should be made to the literary development of the English people.

(*b*) Ancient History (1 unit). This includes: The Beginnings of Civilization, or the early Oriental Theocracies; Greece and Macedonia; Rome to the time of Charlemagne. The amount required is indicated by West's Ancient History, or Wolfson's Essentials of Ancient History.

(*c*) American History and Civics (1 unit). A knowledge of the outline of American History, and of the nature of Federal, State, and local government. The requirement represents three things: the amount of material offered in a text-book in history such as Channing, Student's History of the United States, a text-book in government such as Hinsdale's American Government, or Bryce's American Commonwealth, abr. ed., or their equivalent, and systematic reading of assigned references, which should be summarized in a note-book.

5. LATIN (3 units)

a (1 unit). Collar and Daniell's First Latin Book, with the exception of the Colloquia, Collar's New Gradatim, and D'Ooge's Colloquia Latina, pp. 1–31, the exercises in the latter to be read only at sight, represent the nature and amount of preparation required.

b (1 unit). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1–220, with prose composition, or an equivalent.

c (1 unit). Kelsey's Selections from Ovid, and Gayley's Classic Myths. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

6. GREEK (2 units)

a (1 unit). Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences into Attic Greek. White's First Greek Book represents the amount of preparation required.

b (1 unit). Xenophon's Anabasis, Books I–IV, with questions on the forms, syntax, and subject-matter. The translation into Attic Greek of simple passages of connected narrative based on the Anabasis. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

7. GERMAN (2 units)

a (1 unit). A thorough knowledge of the principles of German grammar. This includes the conjugation of weak and strong verbs, and of the modal and time auxiliaries; the declension of nouns, pronouns, articles, and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

b (1 unit). Reading and translation of the following texts or equivalents: Schiller's Maria Stuart, Modern Prose and Poetry.

The work in German composition should be continued

through the second year. Harris' German Composition is recommended.

8. FRENCH (2 units)

a (1 unit). The ability to read at sight easy French prose, to translate correctly simple English sentences into French, familiarity with all the common idioms of the language, a thorough and accurate knowledge of the principles of French grammar. Rollins' or Super's French Reader indicate the amount of material to be read. The requirements in grammar involve: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminines of adjectives, the plurals of nouns and adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite articles (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work the student may use Chardenal's Complete French Course; later, Fraser and Squair's Grammar is recommended.

b (1 unit). The translation into English of the following texts or their equivalent: Le Voyage de M. Perrichon, by Labiche and Martin; About's Le Roi des Montagnes; Daudet's Le Petit Chose; de Banville's Gringoire; Meilhac and Halevy's L'Ete de Saint Martin; Coppee's Le Luthier de Cremone; Le Tresor.

9. SPANISH (2 units)

a (1 unit). For the first year in Spanish, Ramsay's, Hills and Ford's, Knapp's, or Garner's Spanish Grammar may be used. Selections from Matzke's Spanish Reader, from Knapp's, or from an equivalent text, are to be read.

b (1 unit). For the second year Galdos' Marianella, Partir a Tiempo, Electra, El Pajaro Verde, and selections from Don Quixote, or equivalent texts should be read.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry, or Hessler and Smith's Essentials of Chemistry, and an amount of labora-

tory work equivalent to that outlined in the Manuals which accompany these texts should be completed. Emphasis should be placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY (½ or 1 unit)

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr, represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced.

12. BOTANY (1 unit)

One-half unit will be allowed to any high-school student who has an intelligent knowledge of Andrews' Botany All the Year Round, from page 1 to 233. (American Book Company.) $1.

For 1 unit the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pp. 289 to 293.

13. ZOOLOGY (1 unit)

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's Introduction to Zoology (The Macmillan Company, New York), Merril's Studies in Zoology (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoology at the time of entrance.

14. PHYSIOLOGY (1 unit)

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work. A microscope and prepared slides of human or animal tissues are a necessity. Martin's Human Body (Briefer Course), Hewe's High School Physiology, or Macy and Norris' Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible

Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING (½ unit)

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales, and cash books, etc., and should include thorough understanding of checks, notes, drafts, billing, and, generally, all of the papers used in modern business.

16. SHOPWORK (1 unit)

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than five units for such work.

17. DRAWING (½ unit)

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

ATTENDANCE

EXPENSES OF STUDENTS

The railways of the State are generously cooperating with the Regents of the University by giving reduced rates to students when traveling to and from the University. The Southern Pacific Company, the Nevada Northern, the Tonopah and Las Vegas, the Nevada Central, and the Eureka and Palisade Railroads will sell tickets to students at one-half the usual local rate. To obtain the benefit of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

All text-books used in the University may be purchased at any one of the bookstores in Reno at a price which covers the actual cost of purchasing and a profit to the dealer of from ten to fifteen per cent for handling.

The maintenance of its large and valuable laboratories is a constant and heavy expense to the University. It is impossible for the Regents to provide material in these laboratories free of all expense to the students. For this reason the Regents have established the following moderate charges for the material actually used:

For General Chemistry, per semester	$2.50
For Qualitative Chemistry, per semester	2.50
For Quantitative Chemistry, per semester	2.50
For Agricultural Chemistry, per semester	2.50
For Mineralogy, per semester	2.50
For Junior Assaying, first semester	5.00
For Junior Assaying, second semester	7.50
For Senior Metallurgy, per semester	10.00
For Typewriting, per semester	1.00
For Zoology 1, 3, 6, 7, each, per semester	1.00
For Botany 1, 2, 3, 4, 5, 6, each, per semester	1.00
For Zoology 2, 4, 20, each, per semester	2.00
For Hygiene 1 and 2, each, per semester	2.00

For Botany 20, per semester	$2.00
For Sewing, per semester	1.00
For Cooking, per semester	1.00
For Shopwork, per semester	2.00
For Physics 1 (Freshman), per semester	1.00
For Physics 3 (Sophomore), per semester	2.00
For Physics 20 (each Laboratory period per week), per semester	1.00
For History Syllabus, University, semester	1.00
For History Syllabus, High School, semester	.50

The following deposit fees will be required of students in the department to which the subject belongs, but will be returned to the student at the end of the semester, less the amount of breakage of or damage to material given:

For General Chemistry, per semester	$5.00
For Optical Mineralogy, per semester	5.00
For Geology 4, per semester	5.00
For Mineralogy 5, per semester	5.00
For Surveying (C. E. I.), per semester	5.00
For Physics 1, per semester	5.00
For Physics 3, per semester	5.00
For Biology, one-half or more courses	2.00

A fee of $4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basket-ball, base-ball, and track athletics, and debating. In return for the payment of this fee, the student receives free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

MANZANITA HALL is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. In regard to ventilation, heating, light, and the furnishing of the rooms, all the equipment and arrangements are of the very best kind for the health and comfort and culture of the occupants. Young ladies coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bed-spreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; one comfort, extra thickness, 3 feet by 6, to

put on mattress; 6 good towels; 2 aprons for work in shop and in laboratory; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

LINCOLN HALL is the College home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Richard Brown. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow slips, 20 by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

Rooms in private houses can be rented for $10 to $15 per month.

TABLE BOARD—For the accommodation of the students, the President of the University maintains a dining hall in commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and service have been recently reorganized with a view to securing board and table service of the most acceptable character. The price of table board for the coming year will be $16 a month, payable in advance. If the board is not paid until after the fifteenth of the month an additional charge will be made of twenty-five cents a day until the account is settled. If the bill is not paid by the last day of the month, the privileges of the dining hall will be denied until the bill has been paid. *No deviation will be made from the above regulations.* After the expenses of the dining hall have been fully met, any surplus is paid over to the Board of Regents to pay for service rendered in maintaining Manzanita and Lincoln Hall.

Table board can be obtained elsewhere at from $25 to $30 per month.

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES

	Low	*Moderate*	*Liberal*
Tuition	None	None	None
Board, 36 weeks	$144	$144	$250
Room, light, and fuel	18	18	72
Washing and sundries	20	30	40
Text-books and stationery	6	12	18
Laboratory and athletic fees	8	10	12
	$196	$214	$392

AID TO STUDENTS

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework, and dining-hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

A few annual scholarships have been given for the purpose of assisting deserving students. Mr. and Mrs. Fred O. Norton will give fifty dollars a year for four years to the most deserving student in the School of Mines. The Delta Rho Sorority will give fifty dollars to the most deserving student in the University. The Regents' scholarships—two of fifty dollars and one of twenty-five dollars—will go to students who show the all-around qualities which go to make successful young men and young women. The President will give fifty dollars to the most deserving student in the University, and the same amount to the most deserving student in the State Normal School. In addition, there is the Philo C. Bennett prize of sixty-four dollars for the best essay on the principles of free government.

MATRICULATION

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the

Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credential or examination he is given an admission card by the Registrar. This card must be presented to the Librarian before any books can be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION

1. On registration day the student secures from the Registrar a student registration blank, upon which his studies for the semester are to be entered and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major professor as adviser, and approved by the chairman of the Committee on Group Electives and Graduation Schedules.

4. The signature of each instructor must be obtained for the courses registered in and the card must be signed by the adviser before being deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration, stamped by the Registrar. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

6. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration Committee.

In registering, a student shall give his status as one of four—*Regular, Limited, Partial,* or *Special*—according to the rules following:

1. For "Regular" Freshman standing, a student must be accredited in all the required Preparatory work; or his entrance deficiencies must not exceed five high-school units, and such deficiencies must be made good by the end of the Freshman year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having more than 5 and less than 11 high-school units of entrance deficiencies may register as a "Limited" Freshman, but he may be required by the Entrance Committee to register for at least half of this deficient work in the University High School. If he has 11 or more high-school units of entrance deficiencies he shall be required to register as a student in the University High School for such work, but he may be allowed to take such additional Freshman work as his course and the rules will permit.

4. A "Limited" Sophomore, Junior, or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and departmental permission.

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of mili-

tary drill and physical culture. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the adviser and the department concerned.

3. All courses finally enrolled in, whether elective or required, shall be completed as required work.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registrar's office and may subject the student to admonition, suspension, or dismissal. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time should obtain leave of absence from the Committee on Scholarship.

Each instructor will determine the final grade of students by any method that he may consider best adapted to his courses.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department.

3. Only one reexamination may be given for the removal of any condition. The regular time for such reexamination shall be the beginning of the college year.

4. Any condition not removed by the time the course is

NOTE—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

next repeated becomes a failure and is subject to the rules for failures; but in case of special students, the Committee on Registration may grant exemption from this rule.

1. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the condition within the prescribed time shall be considered as having failed.

2. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Academic Council shall by vote permit an extension of time or the substitution of another course.

3. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration Committee.

GRADUATION

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school are required. Credit is given for work done in other institutions of similar rank and character.

To students with an average of 90 per cent, or over, in all of the work required for graduation the degree "With Honor" will be given.

THESIS REQUIREMENTS

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific or literary knowledge, and good arrangement, and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the Committee on Graduation and Theses not later than the first Monday in November, and all theses should be completed and presented to this Committee on Theses on or before the first day of the final examinations in May.

The thesis should be typewritten upon 8½x11 paper and bound in a 9x11¼ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS
SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE IN CANDIDACY FOR THE DEGREE OF BACHELOR OF ARTS

(Department of History)

By
JOHN EDWARD SMITH
Reno, Nevada
1908

DIPLOMAS AND BACCALAUREATE DEGREES

1. The Degree of Bachelor of Arts is conferred upon students who have completed in a satisfactory manner the four years' work of the School of Liberal Arts.

2. The Degree of Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the School of General Science, the School of Mining Engineering, the School of Mechanical Engineering, the School of Civil Engineering, or the School of Agriculture.

3. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of High-School Grade, is awarded to students who have completed in a satisfactory manner the four years' work of the Advanced Normal Course.

4. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded

to students who have completed in a satisfactory manner the work of the Elementary Normal Course.

THE MASTER'S DEGREE

The Master's Degree is conferred upon students who, in addition to the work required for the Bachelor's Degree, pursue a prescribed course of study of advanced character successfully for at least one academic year.

Candidates for the Master's Degree who have received their Baccalaureate Degree from the University may receive permission to do one-half of their graduate work in some other college or university of high rank.

A part of the required work is a thesis which must show capacity for independent research.

1. The Degree of Master of Arts is conferred upon the students who, in addition to the work required for the Degree of Bachelor of Arts, pursue a prescribed course of study of advanced character successfully for at least one academic year.

2. The Degree of Master of Science is conferred on students who, in addition to the work required for the Degree of Bachelor of Science, pursue a prescribed course of study of advanced character successfully for at least one academic year.

DEGREES OF MINING ENGINEER, MECHANICAL ENGINEER, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer, is conferred only upon presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) One year's graduate work on subjects selected with the approval of the head of the department in which the degree is sought, or

(*b*) Three years' experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

COLLEGE OF ARTS AND SCIENCE

FACULTY

JOSEPH EDWARD STUBBS President
ROBERT LEWERS Vice-President, Professor of Political Economy
HENRY THURTELL Professor of Mathematics and Mechanics
JAMES EDWARD CHURCH, JR.* Professor of the Latin Language and Literature
LAURA DE LAGUNA Professor of the Modern Languages
JEANNE ELIZABETH WIER Professor of History
PETER FRANDSEN Professor of Biology
PATRICK BEVERIDGE KENNEDY Professor of Botany and Horticulture
ROMANZO ADAMS Professor of Education and Sociology
LOWE ABEEL MCCLURE Professor of Military Science and Tactics
W. S. TANGIER SMITH Professor of Geology and Mineralogy
RALPH SMITH MINOR Professor of Physics
MAXWELL ADAMS Professor of Chemistry
HERBERT WYNFORD HILL Professor of the English Language and Literature
KATE BARDENWERPER Assistant Professor of Domestic Science
KATHERINE LEWERS Assistant Professor of Drawing
ERNEST WHITNEY MARTIN Acting Professor of Latin and Greek
REUBEN CYRIL THOMPSON Instructor in Latin and Greek
ELIZA HENRIETTA OVERMAN Assistant in Biology

AIM

The aim of the College of Arts and Science is two-fold:

1. To lay a foundation for the professions, both learned and technical, and

2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

CONDITIONS OF ADMISSION

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized

*Absent on leave.

in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

ADMISSION REQUIREMENTS

Subjects and Credits

GROUP I

1. English (a)	1 unit*
English (b)	1 unit
English (c)	1 unit
2. Mathematics—Algebra and Plane Geometry (a)	1 unit
Mathematics—Algebra and Plane Geometry (b)	1 unit
Mathematics—Algebra and Plane Geometry (c)	1 unit
3. Physics	1 unit
4. History (a and b)	1 unit
History (c)	1 unit
5. Latin (a)	1 unit
Latin (b)	1 unit

*A unit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Three units represent daily recitations throughout three years; one-half unit, a half-year's work with daily recitations.

Latin (c)	1 unit*
Elective	2 units

GROUP II

1. English (a)	1 unit
English (b)	1 unit
English (c)	1 unit
2. Mathematics—Algebra (a)	1 unit
Mathematics—Algebra and Plane Geometry (b)	1 unit
Mathematics—Plane Geometry (c)	1 unit
3. Physics	1 unit
4. History (a and b)	1 unit
History (c)	1 unit
7-8. German or French (a)	1 unit
German or French (b)	1 unit
Elective	3 units

ELECTIVES

1. English (d)	1 unit
2. Mathematics—Solid Geometry (d)	½ unit
5. Latin	1 unit
10. Chemistry	1 unit
11. Physical Geography	½ or 1 unit
12. Botany	½ or 1 unit
13. Zoology	1 unit
14. Physiology	1 unit
15. Bookkeeping	½ unit

GROUP I admits to both schools.

GROUP II admits to the School of General Science.

ELECTIVES: From this list may be selected any subject or subjects for the elective units in Groups I and II.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE

The Degree of Bachelor of Arts is conferred upon students in the School of Liberal Arts, and the Degree of Bachelor of Science upon students in the School of General Science who have satisfactorily completed work aggregating 124 units credit. By an hour, or a unit credit, is meant the equivalent of work demanded by a lecture course meeting for one

*A unit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Three units represent daily recitations throughout three years; one-half unit, a half-year's work with daily recitations.

hour a week for one semester, or a laboratory course requiring two and one-half hours a week for one semester. The work of the first two years is in the main prescribed; that of the last two years is wholly elective, subject, however, to the rules of group and free electives. Students in the General Science course are required to take seven extra hours of Natural Science, as an equivalent of the Latin prescribed for students in the School of Liberal Arts. The work of the Freshman and Sophomore years is prescribed as follows:

SCHOOL OF LIBERAL ARTS

FRESHMAN YEAR

Subjects and Credits Required		*1st Sem.*	*2d Sem.*
English 1	(5)	3	3
Latin 1, 2, 3		4	4
Mathematics 1 and 2	(5)	3	3
French 1, Greek 1, 2, 3, or German 1		4	4
History 1		2	2
Military 1 and 2, or Physical Culture		2	2

SOPHOMORE YEAR

English 4		3	3
Latin 2 and 3		3	3
History 2		3	3
Natural Science (for choice of subjects see below)		4	4
French 2, Greek 2, or German 2 and 3		3	3
Military 1 and 2, or Physical Culture		2	2

SCHOOL OF GENERAL SCIENCE

FRESHMAN YEAR

English 1		3	3
French 1, Greek 1, or German 1		4	4
Mathematics 1 and 2		3	3
Physics 1		2	2
Chemistry 3 and 4		4	4
Military 1 and 2, or Physical Culture		2	2

SOPHOMORE YEAR

English 4		3	3
French 2, Greek 2, or German 2 and 3		3	3
History 2		3	3
Natural Science (for choice of subjects see below)		7	7
Military 1 and 2, or Physical Culture		2	2

While the student should as nearly as possible follow the outline of hours and subjects as here prescribed, he may,

with the sanction of his adviser, defer some of his prescribed work until the Junior or Senior year.

The Natural Science prescribed for the Sophomore year shall be elected from the following courses:

Chemistry 3 and 4, Physics 2 and 3, Geology 1 and 2, Mineralogy 2 and 3, Zoology 1 and 8, Hygiene 1, and Botany 1. More advanced courses may be elected if the student has had the prerequisites. Students in the School of Liberal Arts intending to take a major in some science department in their Junior and Senior years should elect an elementary course in that department in the Sophomore year. Some of the above-named courses give less than the four units credit required, but the deficiency may be satisfied by the election of additional hours either in the group or free electives. All students intending to follow a science group will find it to their advantage to consult their major professor as to the best courses in science to elect in their Sophomore year.

JUNIOR AND SENIOR YEARS

Provided all the work of the Freshman and Sophomore years has been complete as prescribed, courses aggregating 60 units, or an average of 15 units in each semester, should be completed during the Junior and Senior years. Of these 60 units, 40—the group electives—must be chosen within certain correlated groups and with the advice and consent of the major or major and minor departments concerned. The remaining 20 units—the free electives—may be freely elected from any courses offered in the College of Arts and Science, provided that the requirements of the departments in which the work is elected are satisfied.

GROUP ELECTIVES

Each student in the College of Arts and Science shall, at the beginning of his Junior year, elect a department in which he wishes to do a considerable amount of work as his major department. In case any student so choose he may elect a minor department also. If a student elects a major and not a minor department, he shall be required to elect forty hours' work in the two years, with the advice and approval of the head of his major department. The work of the major department shall be the correlating subject of the forty-hours group electives. In case a student elects both a major and a

minor department, the combined work of the two departments must represent a unity of aim, and the heads of the two departments shall constitute an advisory committee, of which the major professor shall be chairman. In this case, the elective group of forty hours must be selected with the advice and approval of the advisory committee.

Students in the School of Liberal Arts may select a major, or a major and minor, from any of the following departments: Greek, Latin, French, German, English, Spanish, History, Law, Economics, Sociology, Education, Zoology, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics.

Students in the School of General Science may select a major, or major and minor, from any of the following departments: Zoology, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics, Education.

The particular grouping will depend on the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
Language—Literature Group	*Social Science Group*
Greek, Latin, French, German, English.	History, Law, Economics, Sociology.
3	4
Biological Science Group	*Physical Science Group*
Zoology, Botany, Chemistry, Geology.	Chemistry, Physics, Mathematics, Geology, Mineralogy.

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to also elect a considerable amount of History. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a Science major will often find it profitable to have a good reading knowledge of both French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Committee on Group Electives and Graduation Schedules, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

Each student shall make a written statement of the work he has accomplished during the Freshman and Sophomore years and of the work he proposes to do under the direction of his major and minor professors during his Junior and Senior years. He shall also make a statement of the coordinating aim which gives unity to the proposed group. This statement shall be placed in the hands of the Committee on Group Electives and Graduation Schedules not later than the first week of the University year.

It shall be the duty of the Committee on Group Electives and Graduation Schedules to examine these statements carefully, and, if needs be, to interview the student presenting them and to determine whether such schedules conform to the rules governing the same. If they do thus conform they shall be approved, otherwise the discrepancy shall be pointed out and the student shall be directed again to consult with his major professor.

When any such group of electives has been approved by the Committee on Group Electives and Graduation Schedules it shall be considered as the work prescribed for graduation. Any student who shall complete the work of any such group, together with work aggregating twenty hours credit—the free electives—to be chosen freely within the prescribed groups of departments, shall be entitled to graduate. It shall be the duty of the committee to determine for each candidate for graduation whether he has completed such work. The committee shall act as a committee, the individual members having no authority outside of the committee.

FREE ELECTIVES

Twenty hours, or an average of five hours in any one semester, may be freely elected from any of the foregoing courses offered in the College of Arts and Science, provided only that the requirements of the departments concerned are satisfied. In addition to these courses, the student may elect from subjects offered by the Department of Domestic Arts and Science in the College of Agriculture courses which may

be counted toward the Degrees of B.A. or B.S., to an amount not to exceed one hour in any one semester nor four hours in all.

Each Junior student in the College of Arts and Science shall file with the Committee on Registration, not later than two days before registration, a form containing the group elective and free elective studies desired for the Junior and Senior years, with the signature of the major professor, or signatures of major and minor professors. It is advisable that students should plan their work for the Junior and Senior years as early as the beginning of the Sophomore year in order that the studies elected then may fit in with their later work.

THESES

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED NORMAL COURSE

Students in the College of Arts and Science may be registered in the Normal School, Advanced Course, during their Junior and Senior years by electing courses in Education and Psychology aggregating eighteen hours, and Course 1 in Music. Such students shall, in addition to the courses in Education and Psychology, have a group of thirty, instead of forty, hours and shall freely elect twelve, instead of twenty, hours; but in all other respects they will be subject to the above rules as to electives.

THE MASTER'S DEGREE

The Master's Degree is conferred upon students who, in addition to the work required for the Bachelor's Degree, pursue a prescribed course of study of advanced character successfully for at least one academic year.

Candidates who have received their Baccalaureate Degree at this University may receive permission to do one-half of their graduate work in some other college or university of high rank. A part of the required work is a thesis which must show capacity for independent research.

The Degree of Master of Arts is conferred only upon holders of the Degree of Bachelor of Arts, and the Degree of Master of Science only upon holders of the Degree of Bachelor of Science.

COURSES OF INSTRUCTION

I.	Greek.	XIV.	Psychology.
II.	Latin.	XV.	Zoology.
III.	French.	XVI.	Hygiene.
IV.	Spanish.	XVII.	Botany.
V.	German.	XXV.	Domestic Science.
VI.	English.	XXVI.	Geology.
VII.	Music.	XXVII.	Mineralogy.
VIII.	Art.	XXVIII.	Chemistry.
IX.	History.	XXIX.	Physics.
X.	Law.	XXX.	Mathematics.
XI.	Economics.	XXXVI.	Drawing.
XII.	Sociology.	XXXVII.	Military Science and Tactics.
XIII.	Education.		

I. GREEK LANGUAGE AND LITERATURE

PROFESSOR MARTIN, MR. THOMPSON

a. ELEMENTARY. An introduction to the Greek language, based largely upon the Greek element in English and leading to the rapid reading of the New Testament. This course may be taken by itself and is open to all students. *First semester. Hours to be arranged. Four credits.* Professor Martin.

b. ELEMENTARY (continued). Rapid review of Greek Grammar, leading to the reading of Xenophon's Anabasis. Open to those who have taken Greek *a* and to others who satisfy the department of their fitness. *Second semester. Hours to be arranged. Four credits.* Professor Martin.

1. PLATO AND LYSIAS. Plato's Apology and Crito, and Lysias' Orations Against Eratosthenes, Against the Grain Dealers and For the Cripple. Open to those who have had Greek *a* and *b*, and to those who have satisfied the full entrance requirements in Greek. *First semester. Hours to be arranged. Three credits.* Professor Martin.

2. HOMER'S ODYSSEY. Introduction to the grammar, prosody, and criticism of Homer. After a more intensive study of the earlier books, the class will read very rapidly selected passages of such length as will give some appreciation of the Odyssey as a whole. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

3. GREEK PROSE COMPOSITION (first course). Review of Greek Grammar and the writing of simple connected narrative. Required of all Greek majors, and open to those taking

Greek 1 and 2. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 1, 2, and 3 constitute the full year's work in Freshman Greek.

4. HOMER'S ILIAD. Rapid reading of the Menis of Alcestis, Medea, and Iphigeneia among the Taurians will be read in class and on problems of Homeric criticism. *First semester. Hours to be arranged. Three credits.* Professor Martin.

5. EURIPIDES. Introduction to Greek Tragedy. The Alcestis, Medea, and Iphigineia among the Taurians will be read and interpreted. Lectures on the scenic antiquities of the Greek drama and on the artistic form and structure of Greek tragedy. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

6. GREEK PROSE COMPOSITION (second course). The writing of longer connected passages based upon the Historians and Plato, with constant comparison of Greek and English idiom. Required of Greek majors and open to those who have taken Greek 3. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 4, 5, and 6 constitute the full year's work in Sophomore Greek.

7. SOPHOCLES AND ÆSCHYLUS. Greek Tragedy continued. The Antigone or Oedipus Tyrannus of Sophocles and the Agamemnon of Aeschylus will be read and interpreted in class. *First semester. Hours to be arranged. Three credits.* Professor Martin.

8. THUCYDIDES. Selections from Books VI and VII, the Sicilian Expedition, will be read. Lectures, papers, and discussions on the rise, ascendency, and decline of the power of Athens. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

9. ARISTOPHANES. The Birds and Frogs. Lectures on the origin and growth of Greek comedy. *First semester. Hours to be arranged. Two credits.* Professor Martin.

10. HERODOTUS. Rapid reading of large portions of Books II and VIII. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

11. PLATO. The reading and interpretation of the Phædo. Lectures, papers, and discussions on the Greek schools and

COURSES OF INSTRUCTION

I.	Greek.	XIV.	Psychology.
II.	Latin.	XV.	Zoology.
III.	French.	XVI.	Hygiene.
IV.	Spanish.	XVII.	Botany.
V.	German.	XXV.	Domestic Science.
VI.	English.	XXVI.	Geology.
VII.	Music.	XXVII.	Mineralogy.
VIII.	Art.	XXVIII.	Chemistry.
IX.	History.	XXIX.	Physics.
X.	Law.	XXX.	Mathematics.
XI.	Economics.	XXXVI.	Drawing.
XII.	Sociology.	XXXVII.	Military Science and Tactics.
XIII.	Education.		

I. GREEK LANGUAGE AND LITERATURE

PROFESSOR MARTIN, MR. THOMPSON

a. ELEMENTARY. An introduction to the Greek language, based largely upon the Greek element in English and leading to the rapid reading of the New Testament. This course may be taken by itself and is open to all students. *First semester. Hours to be arranged. Four credits.* Professor Martin.

b. ELEMENTARY (continued). Rapid review of Greek Grammar, leading to the reading of Xenophon's Anabasis. Open to those who have taken Greek *a* and to others who satisfy the department of their fitness. *Second semester. Hours to be arranged. Four credits.* Professor Martin.

1. PLATO AND LYSIAS. Plato's Apology and Crito, and Lysias' Orations Against Eratosthenes, Against the Grain Dealers and For the Cripple. Open to those who have had Greek *a* and *b*, and to those who have satisfied the full entrance requirements in Greek. *First semester. Hours to be arranged. Three credits.* Professor Martin.

2. HOMER'S ODYSSEY. Introduction to the grammar, prosody, and criticism of Homer. After a more intensive study of the earlier books, the class will read very rapidly selected passages of such length as will give some appreciation of the Odyssey as a whole. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

3. GREEK PROSE COMPOSITION (first course). Review of Greek Grammar and the writing of simple connected narrative. Required of all Greek majors, and open to those taking

Greek 1 and 2. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 1, 2, and 3 constitute the full year's work in Freshman Greek.

4. HOMER'S ILIAD. Rapid reading of the Menis of Alcestis, Medea, and Iphigeneia among the Taurians will be read in class and on problems of Homeric criticism. *First semester. Hours to be arranged. Three credits.* Professor Martin.

5. EURIPIDES. Introduction to Greek Tragedy. The Alcestis, Medea, and Iphigineia among the Taurians will be read and interpreted. Lectures on the scenic antiquities of the Greek drama and on the artistic form and structure of Greek tragedy. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

6. GREEK PROSE COMPOSITION (second course). The writing of longer connected passages based upon the Historians and Plato, with constant comparison of Greek and English idiom. Required of Greek majors and open to those who have taken Greek 3. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 4, 5, and 6 constitute the full year's work in Sophomore Greek.

7. SOPHOCLES AND ÆSCHYLUS. Greek Tragedy continued. The Antigone or Oedipus Tyrannus of Sophocles and the Agamemnon of Aeschylus will be read and interpreted in class. *First semester. Hours to be arranged. Three credits.* Professor Martin.

8. THUCYDIDES. Selections from Books VI and VII, the Sicilian Expedition, will be read. Lectures, papers, and discussions on the rise, ascendency, and decline of the power of Athens. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

9. ARISTOPHANES. The Birds and Frogs. Lectures on the origin and growth of Greek comedy. *First semester. Hours to be arranged. Two credits.* Professor Martin.

10. HERODOTUS. Rapid reading of large portions of Books II and VIII. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

11. PLATO. The reading and interpretation of the Phædo. Lectures, papers, and discussions on the Greek schools and

systems of philosophy. *First semester. Hours to be arranged. Three credits.* Professor Martin.

12. DEMOSTHENES. Oration on the Crown. Informal lectures and assigned readings on the Attic Orators and the life and times of Demosthenes. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

13. GREEK NEW TESTAMENT. A study of the Gospel of Mark. Lectures on the grammar, lexicography, canon, and manuscripts of the New Testament. *First semester. Hours to be arranged. Two credits.* Professor Martin.

14. THEOCRITUS. Selected Idyls will be read and interpreted. Lectures on the characteristics and tendencies of Alexandrine poetry. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

Courses 7, 8, 9, and 10 are open to both Juniors and Seniors and will alternate with courses 11, 12, 13, and 14.

20. PRO-SEMINAR FOR UNDERGRADUATES. Introduction to the interpretation and criticism of classical authors. Lectures on paleography and the transmission of manuscripts. In 1909–1910 Theocritus will be the author for special study. Open to Seniors only. *Both semesters. Hour to be arranged. One credit.* Professor Martin.

21. THE GREEK EPIC IN ENGLISH. Lectures on the structure, growth, and criticism of the Homeric poems, with some consideration of the society and art of the earliest Greek civilization. This course is intended for students of literature in general and is open to all. *First semester. Hours to be arranged. Two credits.* Professor Martin.

22. GREEK TRAGEDY IN ENGLISH. Lectures on the structure and interpretation of selected tragedies of Aeschylus, Sophocles, and Euripides, with some consideration of the problems of the Greek theater and the manner of presentation of the antique drama. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

23. PRIVATE LIFE OF THE GREEKS. Lectures, with illustrations by stereopticon and photographs, aiming to give a systematic conception of Ancient Greek Life. Open to all students. *First semester. Hours to be arranged. Two credits.* Professor Martin.

24. GREEK ART. Lectures, illustrated with stereopticon and photographs, on the topography and monuments of Athens, and on the art and architecture of Ancient Greece.

Papers and discussions on assigned topics in Greek religion and mythology. Open to all students. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

Courses 21 and 22 (or Latin 21) will alternate with courses 23 and 24 (or Latin 23).

II. LATIN LANGUAGE AND LITERATURE

PROFESSOR CHURCH, MR. THOMPSON

1. CICERO AND LIVY. The De Senectute of Cicero and Book I of Livy will be read with close attention to forms and syntax. Collateral reading on the history and literature of Rome down to the Age of Augustus. *First semester, 10–11, M. W. F. Three credits. 201 Morrill Hall.* Professor Church.

2. HORACE. The greater part of the Odes and Epodes will be read and interpreted. Special attention will be given to the prosody and to the metrical reading of Horace. Informal discussions upon the literary history and social conditions of the Age of Augustus. *Second semester, 10–11, M. W. F. 201 Morrill Hall.* Professor Church.

3. LATIN PROSE COMPOSITION (first course). Review of Latin Grammar and the writing of simple connected narrative with collateral reading in Nepos and the De Amicitia of Cicero. Required of all Latin majors and open to those taking Latin 1 and 2. *Both semesters. Hour to be arranged. One credit each semester. 201 Morrill Hall.* Professor Church.

4. PLAUTUS AND TERENCE. The Mostellaria of Plautus will be studied with special regard to the language and prosody. The Rudens of Plautus and the Andria of Terence will then be read rapidly with more emphasis upon the origin, development, and general characteristics of Roman comedy. *First semester, 9–10, M. W. F. Three credits. 201 Morrill Hall.* Professor Church.

5. TACITUS. Selections from the Annals will be read, with some consideration of the history and literary tendencies of the Early Empire. *Second semester, 9–10, M. W. F. Three credits. 201 Morrill Hall.* Professor Church.

6. LATIN PROSE COMPOSITION (second course). The writing of longer connected passages based upon Livy. Constant comparison of Latin and English idiom accompanied by collateral reading in Livy Books XXI and XXII. Required

of all Latin majors and open to those who have taken Latin 3. *Both semesters. Hour to be arranged. One credit each semester. 201 Morrill Hall.* Professor Church.

7. ROMAN SATIRE. Horace and Juvenal will be read in part. Lectures on the origin and development of satire among the Romans. *First semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

8. ROMAN ELEGIAC POETRY. Selections from Catullus, Tibullus, Propertius and Ovid. Lectures on lyric and elegiac poetry among the Romans. *Second semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

9. THE ROMAN NOVEL. Rapid reading of the Cena Trimalchionis of Petronius and the Cupid and Psyche of Apuleius. Lectures on the growth of the prose romance in Greek and Roman literature. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

10. PLINY'S LETTERS. Selected letters of Pliny will be read with constant regard to the times and state of society portrayed. Lectures on the epistolary art of the Ancients. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

11. CICERO AND SENECA. Selections from the philosophical writings of Cicero and Seneca. Lectures and papers on the various schools of philosophy among the Romans. *First semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

12. PATRISTIC AND LATE LATIN. The Octavius of Minucius Felix and the Sanctae Silviae Perigrinatio. Lectures on the characteristics of later Latin literature with some consideration of the relation of late Latin to the Romance languages. *Second semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

13. INTRODUCTION TO LATIN EPIGRAPHY. A large number of inscriptions of interest for form or content will be read. Lectures on the forms, linguistic peculiarities and classification of Latin inscriptions. This course will aim to give students a working knowlege of the Corpus Inscriptionum Latinarum. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

14. TEACHERS' COURSE. Lectures on the methods and

problems involved in teaching Latin in secondary schools. Discussion and comparison of the texts in general use with practice teaching under the supervision of the instructor. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

20. PRO-SEMINAR FOR UNDERGRADUATES. In 1909–10 the Eclogues of Vergil and the later pastoral poetry among the Romans will be taken for special study. Open to Seniors only. *Both semesters. Hour to be arranged. One credit. 201 Morrill Hall.* Professor Church.

Courses 7, 8, 9, and 10 alternate with courses 11, 12, 13, and 14, and are open to both Juniors and Seniors.

21. COMPARATIVE EPIC. The Aeneid of Vergil and the Divine Comedy of Dante will be read in translation. Lectures on the characteristics of epic poetry among the Romans and on the life and times of Dante with informal discussion of the problems connected with the interpretation of the two poems. If possible, this course should be taken in connection with Greek 21. Open to all. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

23. ROMAN PRIVATE LIFE. Lectures on the private life of the Romans, illustrated with the stereopticon and photographs. Papers and assigned readings on the topography, monuments, and art remains of Rome and Pompeii. This course alternates with Greek 23. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

III. FRENCH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

1. BEGINNING FRENCH. Drill in grammar and in translating simple English into French, and French into English. *Both semesters, 8–9, M. T. Th. F. 104 Stewart Hall.* Professor de Laguna.

2. SECOND-YEAR FRENCH. Translation of Daudet's Selected Stories, Dumas' Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoleon, Extraits de Memoires et d'Histoires, and Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9–10, M. W. F. 104 Stewart Hall.* Professor de Laguna.

3. THE FRENCH DRAMATISTS. Selected plays of Moliere, Racine, and Corneille, Hugo's Ruy Blas, Rostand's Cyrano de Bergerac and L'Aiglon. A synopsis or critique of each play read is required. Advanced prose composition. *104 Stewart Hall.* Professor de Laguna.

4. MODERN FRENCH. Poetry and prose, advanced prose composition. Essays in French on the works studied are required. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Not given 1909–10. 104 Stewart Hall.* Professor de Laguna.

5. RAPID READING. *Prerequisite:* 1 and 2. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

20. SEMINAR FOR UNDERGRADUATES. Old French: Grammar, phonetics, morphology, syntax. Reading: Chanson de Roland, Chretien de Troyes, Chevalier au Lion. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

IV. SPANISH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

1. BEGINNING SPANISH. The course in Spanish has been laid out for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from textbook work is devoted to Spanish conversation. *Elective. Prerequisites:* Two years of Latin and two of French or an equivalent. *Both semesters. Hours to be arranged. Two credits. 104 Stewart Hall.* Professor de Laguna.

2. ADVANCED SPANISH. Modern Spanish novels and plays by standard authors. Selections from Le Sage's Gil Blas and Cervantes' Don Quixote. *Prerequisite:* Spanish 1. *Both semesters. Hours to be arranged. T. Th. Two credits. 104 Stewart Hall.* Professor de Laguna.

V. GERMAN LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

1. ELEMENTARY GERMAN. Drill in grammar, reading of easy texts, and exercises in composition. *Both semesters, 8–9, daily. Four credits.* Miss Riegelhuth.

2. SECOND-YEAR GERMAN. Rapid reading of Leander, Traumereien, Bernhardt's Auf der Sonnenseite, and other

simple stories and plays. Schiller's Maria Stuart, or Die Jungfrau von Orleans. Prose composition. *Prerequisite:* German 1 or two years of high-school German. *Both semesters, 9–10, M. W. F., 1–2, T. Three credits.* Miss Riegelhuth.

4. GOETHE. Torquato Tasso and Faust, I. Two papers in German are required: a synopsis of Torquato Tasso and a characterization of Faust. History of German literature. Advanced prose composition. *Prerequisites:* German 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Not given 1909–10. 104 Stewart Hall.* Professor de Laguna.

5. HISTORY OF GERMAN LITERATURE. German Lyrics and German Novels of the Nineteenth Century. Critical papers in German are required. Advanced prose composition. *Prerequisites:* German 1 and 2.

20. SEMINAR FOR UNDERGRADUATES. The interpretation of the Nibelungenlied or Walther von der Vogelweide. *Both semesters. Hours to be arranged. One credit.* Professor de Laguna.

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. ————

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 9–10, Section 2, 10–11, daily. Three credits. Stewart Hall.* Mr. ————.

2*a*. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. *Prerequisite:* English 1. *First semester. Hours to be arranged. Three credits. Stewart Hall.* Professor Hill.

2*b*. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisites:* English 1 and 2*a*. *Second semester. Hours to be arranged. Two credits. Stewart Hall.* Professor Hill.

3. THE MODERN DRAMA. Ibsen, Maeterlinck, Pinero, Shaw. *Prerequisite:* English 1. *Second semester, 10–11, M. W. F. Three credits. Stewart Hall.* Professor Hill.

GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes.

Prerequisite: English 1. *Both semesters, 9–10, M. W. F. Stewart Hall.* Professor Hill.

5. LITERATURE OF THE NINETEENTH CENTURY. 1—General survey of the period, 2—Tennyson and Browning. *Prerequisites:* English 1 and 4. (This course alternates with 6). *Not given 1909–10.* Professor Hill.

6. SHAKESPEARE. The interpretation of six plays. *Prerequisites:* English 1 and 4. *Both semesters, 11–12, M. T. Th. Stewart Hall.* Professor Hill.

7. CHAUCER. The Canterbury Tales. *Prerequisites:* English 1 and 4. *First semester, 2–3, T. Th. F. Stewart Hall.* Professor Hill.

8. MILTON. Minor Poems and Paradise Lost. *Prerequisites:* English 1 and 4. *Second semester, 2–3, T. Th. F. Stewart Hall.* Professor Hill.

9. OLD ENGLISH. 1—Grammar, and the reading of simple prose and verse. 2—Beowulf. *Prerequisites:* English 1 and 4. (This course alternates with courses 7 and 8). *Not given 1909–10.* Professor Hill.

20. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged with individual students. One credit. Library.* Professor Hill.

VII. MUSIC

MRS. WOOD

1. NOTATION AND SIGHT SINGING. The elements of vocal music. *Both semesters. Hours to be arranged. One credit.* In the second semester, one recitation will be choral practice with the University Chorus. *6 Morrill Hall.* Mrs. Wood.

2. MUSICAL APPRECIATION. Lectures in the history of Music, biography, and musical form, with frequent illustrative recitals. *Both semesters. Hours to be arranged. One credit. 6 Morrill Hall.* Mrs. Wood.

3. THEORY. Written and analytical work in elementary harmony. *Prerequisite:* Some knowledge of piano-forte, band, or orchestral instrument. *Both semesters. Hours to be arranged. Two credits. 6 Morrill Hall.* Mrs. Wood.

4. APPLIED MUSIC. Students of voice, piano, or solo instruments will be given credit for specified work under instructors approved by the head of the department. *Both semesters. Hours and credits to be arranged.*

5. THE UNIVERSITY CHORUS. Systematic study of choral music with special reference to University needs. Mrs. Wood.

VIII. ART

ASSISTANT PROFESSOR LEWERS

1. DRAWING. Antique life and still life. *Hours and credits to be arranged.* Assistant Professor Lewers.

2. PAINTING. From nature in oil and water colors. *Hours and credits to be arranged.* Assistant Professor Lewers.

3. ORNAMENT. Historic ornament and conventionalization. *Hours and credits to be arranged.* Assistant Professor Lewers.

4. CLAY MODELING. *Hours and credits to be arranged.* Assistant Professor Lewers.

For description of other courses, see Art, State Normal School.

IX. HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER

1. MEDIAEVAL HISTORY FROM THE FOURTH TO THE THIRTEENTH CENTURY. Beginning with the history of the Barbarian invasions the course traces the development of primitive Germanic institutions, the rise of the mediæval church and the papacy, the expansion of the Frankish Empire, and the establishment of feudalism. *Both semesters, 10–11, T. Th. 202 Morrill Hall.* Professor Wier.

2. THE HISTORY OF EUROPE FROM THE FOURTEENTH TO THE EIGHTEENTH CENTURY. The formation of modern states, important features of the Renaissance, political and social development, as well as international relations, since the Peace of Westphalia. Special attention is given to the rise of Russia and Prussia, and to the change in Western Europe from the absolutism of the Old Regime to the democracy and individualism of the Nineteenth Century. *Both semesters, 1–2, M. W. F. 202 Morrill Hall.* Professor Wier.

3. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for the study of law. *Prerequisite:* The character of the work will render desirable previous training in History on the part of the student. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall.* Professor Wier.

4. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND SINCE 1485. The political history is traced merely as

a background for the study of the growth of the English Parliament and the Cabinet system. Comparisons are made between the existing forms of government and administration in the various countries of Europe and America. Important as a preparation for the study of law. *Not given 1909–1910.*

5. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Both semesters. Hours to be arranged. Three credits. 202 Morrill Hall. Given on request.* Professor Wier.

9. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoints rather than as a French local crisis. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall. Not given 1909–1910.* Professor Wier.

10. THE HISTORY OF THE PACIFIC SLOPE THROUGH THE EARLY AMERICAN PERIOD. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall. Not given 1909–1910.* Professor Wier.

11. NINETEENTH AND TWENTIETH CENTURY HISTORY. A comparative study of the main events of recent history.

20. HISTORY SEMINAR. *Both semesters. Hours to be arranged. One credit. 202 Morrill Hall.* Professor Wier.

X. LAW

PROFESSOR LEWERS, CAPTAIN BRAMBILA

1. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester, M. W. F. Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

2. INTERNATIONAL LAW. The principles of International Law as seen by the leading text writers of America, England, and the Continent. *Second semester. Hours to be arranged. M. W. F. 301 Morrill Hall.* Captain Brambila.

3. ADVANCED LAW. The object of the course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisite:* Law 1 and 2. *Both semesters, M. W.*

F. Hours to be arranged. 301 Morrill Hall. Professor Lewers.

XI. ECONOMICS

PROFESSOR LEWERS

1. POLITICAL ECONOMY. The Elements of Political Economy. Recitations on the text, lectures and assigned readings. Political Economy or some equivalent. *Both semesters, 10–11, M. W. F. 301 Morrill Hall.* Professor Lewers.

2. FINANCIAL HISTORY OF THE UNITED STATES. A detailed study of the experiences and legislation of the United States touching currency, coinage, and banking. The study will be founded, as far as possible, on examination of original sources. *Prerequisite:* 1. *Both semesters. Hours to be arranged. M. W. F. President's Office.* President Stubbs.

XII. SOCIOLOGY

PROFESSOR ADAMS

1. INTRODUCTION TO THE STUDY OF SOCIETY. The purpose of this course is to present the social process as a unity. The demand is not so much for detailed knowledge as for a correct point of view. Society is regarded as organic and evolutionary. The fundamental social institutions and their functions are studied, and their development through savagery, barbarism, and civilization is considered. *First semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

2. SOCIAL PROBLEMS. The aim of this course is to present a number of present-day problems from the point of view of Course 1. Among the problems are the labor problem, socialism, race problems, problems of the city, problems of rural communities, crime, pauperism, sanitation, etc. Not all of these subjects will receive attention during any one semester, but the course will include one or more of them selected according to the interest of the class. *Prerequisite:* Course 1. *Second semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

20. RESEARCH COURSE. Students choosing Sociology for a major subject will choose a thesis subject near the beginning of the Senior year, and carry on reading and research work during both semesters. Arrangements will be made in each case for consultations and reports during the year. *Hours and credits to be arranged.* Professor Adams.

XIII. EDUCATION

PROFESSOR ADAMS, ASSISTANT PROFESSOR ————

4. PRACTICE TEACHING. Opportunities for observation and for practice teaching are afforded by the Reno Public Schools. The work is done under the joint supervision of the Department of Education and the City Superintendent. Required of candidates for graduation from the Normal School. *Both semesters, Senior year. Hours to be arranged.* Professor Adams and Assistant Professor ————.

5. LOGIC. *Second semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

6. CHILD STUDY. This course is designed to do two things: (1) To stimulate students to an intelligent and sympathetic observation and interpretation of the activities of children, and to acquaint them with the results of scientific investigations as to their physical and mental development; and (2) to consider the aim, matter, and method of education as determined by the child's needs at each stage of development. *Second semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

7. HISTORY OF EDUCATION. The aim of this course is to present education from a social point of view. Savage, barbarian, and ancient education are presented briefly by way of introduction, but chief attention is given to the modern period. In each case emphasis is placed upon the relation of the educational system to the type of social organization. Our own educational system is criticised as a product, in part, of the demands of older social conditions, and the need of readjustment to meet present demands is pointed out. *First semester, 9–10, M. T. Th. F. 101 Stewart Hall.* Professor Adams.

8. EDUCATIONAL VALUES AND METHODS. In this course attention is given to the more immediate problems of school work. The course of study for elementary and secondary schools is considered from the standpoint of the child as an individual and as a future American citizen. An attempt is made to point out the values of each of the subjects ordinarily studied in public schools, and to discover the methods of teaching and study that are best designed to realize these values. *Second semester, 9–10, M. T. Th. F. 101 Stewart Hall.* Professor Adams.

XIV. PSYCHOLOGY

PROFESSOR FRANDSEN

1. GENERAL PSYCHOLOGY. Lectures, reports, quizzes, and an occasional laboratory exercise. Special attention is given to the relation between the nervous and mental processes. The course is primarily intended to form a psychological basis for the advanced courses in education. *Prerequisite:* Hygiene 1 or equivalent. *Second semester. Lectures, 8–9, M. W. F. Sat. Four credits. 101 Stewart Hall.* Professor Frandsen.

XV. ZOOLOGY

PROFESSOR FRANDSEN, MISS OVERMAN

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. 101 Stewart Hall. Laboratory, 2–4:40, M. W. Four credits. 202 Hatch Hall.* Professor Frandsen and Miss Overman.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anatomy in the high school and as a preparation for research work in anatomy. *Prerequisites:* Zoology 1 and Hygiene 1. *Both semesters, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen.

3. HISTOLOGY. The methods of killing, fixing, sectioning, staining, and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisites:* Zoology 1 and 2, Hygiene 1. *First semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen.

4. EMBRYOLOGY. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick and pig at successive

design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2*a*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3*a*. HISTORY OF COOKERY. Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

One credit only is given each semester for work in the Department of Domestic Science.

XXVI. GEOLOGY

PROFESSOR SMITH

1*a*. DYNAMIC AND STRUCTURAL GEOLOGY. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10–11, M. W. F. Mackay Mining Building.* Professor Smith.

1*b*. HISTORICAL GEOLOGY. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships, and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American continent. Lectures and recitations. *Prerequisite:* Geology 1. *Second semester, 10–11, M. F. Mackay Mining Building.* Professor Smith.

2. ELEMENTARY PETROLOGY. Lectures on the classification, characters, and origin of rocks. *Prerequisites:* Geology 1 and Mineralogy 4. *First semester, 1–2, M. W. Mackay Mining Building.* Professor Smith.

3. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens, and in thin sections with the microscope. *Prerequisites:* Mineralogy 5 and Geology 3 (the latter may be taken concurrently). *First semester, 1–4, F. One credit. Mackay Mining Building.* Professor Smith.

4. FIELD GEOLOGY. Instruction in field methods with actual practice in the investigation of selected areas. Five days of field work are given in the second semester of the Junior year, a part of this time being devoted to the map-

ping of some area in the vicinity of the University. During the summer vacation of the Junior year, the members of this class are expected to spend three weeks in the mapping and study of some selected field, preferably a mining camp, where both the underground and surface geology may be investigated. A concise report of this work, together with well-kept field notes, a finished geological map, and cross-sections, will be required of each member of the class. The office work required for the completion of the mapping will be done during the first semester of the Senior year, at times to be arranged, when occasional lectures on the theoretical aspects of the work will also be given. *Prerequisite:* Geology 1. *Both semesters. Hours to be arranged. Three credits.* Professor Smith.

5. ECONOMIC GEOLOGY. A study of the modes of occurrence, origin, and distribution of the principal ores, non-metallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Mineralogy 3, Geology 1, 2, and 3. *Second semester, 10–11, T. W. Th. Mackay Mining Building.* Professor Smith.

6. THE NATURE AND ORIGIN OF SOILS. Lectures and outside reading. *Prerequisites:* Geology 1 and Mineralogy 1. *Second semester. Hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. UNDERGRADUATE THESIS COURSE. *Second semester, at least two periods a week. Two credits. Mackay Mining Building.* Professor Smith.

21. GRADUATE COURSE. Original investigation of geological problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, MR. ————

1. DETERMINATIVE MINERALOGY. (*a*) The determination of the more common minerals chiefly by means of their physical properties, using such simple physical tests as are of easy application in the field. (*b*) The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 1, 2, and 3. *Both semesters, 2–4:30, M. T. Mackay Mining Building.* Mr. ————.

design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2*a*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3*a*. HISTORY OF COOKERY. Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

One credit only is given each semester for work in the Department of Domestic Science.

XXVI. GEOLOGY

PROFESSOR SMITH

1*a*. DYNAMIC AND STRUCTURAL GEOLOGY. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10–11, M. W. F. Mackay Mining Building.* Professor Smith.

1*b*. HISTORICAL GEOLOGY. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships, and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American continent. Lectures and recitations. *Prerequisite:* Geology 1. *Second semester, 10–11, M. F. Mackay Mining Building.* Professor Smith.

2. ELEMENTARY PETROLOGY. Lectures on the classification, characters, and origin of rocks. *Prerequisites:* Geology 1 and Mineralogy 4. *First semester, 1–2, M. W. Mackay Mining Building.* Professor Smith.

3. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens, and in thin sections with the microscope. *Prerequisites:* Mineralogy 5 and Geology 3 (the latter may be taken concurrently). *First semester, 1–4, F. One credit. Mackay Mining Building.* Professor Smith.

4. FIELD GEOLOGY. Instruction in field methods with actual practice in the investigation of selected areas. Five days of field work are given in the second semester of the Junior year, a part of this time being devoted to the map-

ping of some area in the vicinity of the University. During the summer vacation of the Junior year, the members of this class are expected to spend three weeks in the mapping and study of some selected field, preferably a mining camp, where both the underground and surface geology may be investigated. A concise report of this work, together with well-kept field notes, a finished geological map, and cross-sections, will be required of each member of the class. The office work required for the completion of the mapping will be done during the first semester of the Senior year, at times to be arranged, when occasional lectures on the theoretical aspects of the work will also be given. *Prerequisite:* Geology 1. *Both semesters. Hours to be arranged. Three credits.* Professor Smith.

5. ECONOMIC GEOLOGY. A study of the modes of occurrence, origin, and distribution of the principal ores, non-metallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Mineralogy 3, Geology 1, 2, and 3. *Second semester, 10–11, T. W. Th. Mackay Mining Building.* Professor Smith.

6. THE NATURE AND ORIGIN OF SOILS. Lectures and outside reading. *Prerequisites:* Geology 1 and Mineralogy 1. *Second semester. Hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. UNDERGRADUATE THESIS COURSE. *Second semester, at least two periods a week. Two credits. Mackay Mining Building.* Professor Smith.

21. GRADUATE COURSE. Original investigation of geological problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, MR. ————

1. DETERMINATIVE MINERALOGY. (*a*) The determination of the more common minerals chiefly by means of their physical properties, using such simple physical tests as are of easy application in the field. (*b*) The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 1, 2, and 3. *Both semesters, 2–4:30, M. T. Mackay Mining Building.* Mr. ————.

2. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11. Laboratory, 2–4:30, W. Two credits. Mackay Mining Building.* Professor Smith.

3. DESCRIPTIVE MINERALOGY. Lectures on the classification, salient properties, and mode of occurrence of the more important minerals, illustrated by typical specimens. *Prerequisites:* Mineralogy 2, and first semester of Mineralogy 1. *Second semester, 9–10, Th. F. Mackay Mining Building.* Professor Smith.

4. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Physics 2 and 3, Mineralogy 2. *Second semester, 1–2, M. T. Mackay Mining Building.* Professor Smith.

5. OPTICAL PROPERTIES OF MINERALS. Microscope study and determination of the rock-making minerals in thin section, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently.) *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

6. GRADUATE COURSE. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, MR. KENNEDY

1. GENERAL INORGANIC CHEMISTRY. Lectures and recitations on the elementary theories and fundamental principles of chemistry. *Both semesters, 1–2, T. W. Th. Two credits. 206, 101 Chemistry Building.* Professor Adams.

2. GENERAL INORGANIC CHEMISTRY. A laboratory course illustrating and verifying the fundamental laws of chemistry. *Both semesters, 2–4:30, W. Th. Two credits. 206, 102 Chemistry Building.* Professor Adams and Mr. Kennedy.

3. QUALITATIVE ANALYSIS. A laboratory course open to students who have completed Course 2. One hour each week will be devoted to explanation and discussion of the principles of analysis. *Second semester, 2–4:30, Th. Two credits. 101 Chemistry Building.* Professor Adams and Mr. Kennedy.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisites:* Chemistry 1, 2, and

3. *First semester, 2–4:30, F., 8–12, Sat. Three credits. 102 Chemistry Building.* Professor Adams.

6. ADVANCED QUANTITATIVE ANALYSIS. Special problems in analytical chemistry will be assigned to meet the demands of the individual student and the department in which he wishes to take his degree. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, F., 8–12, Sat. Three credits. 102 Chemistry Building.* Professor Adams.

7. ORGANIC CHEMISTRY. Lectures and reviews on the Chemistry of the Carbon Compounds. *Prerequisite:* Chemistry 5. *Both semesters, 10–11, T. Th. Two credits. 206 Chemistry Building.* Professor Adams.

8. CARBON COMPOUNDS. A laboratory course given in connection with Chemistry 7. *Both semesters, 2–4:30, M. T. Two credits. 102 Chemistry Building.* Professor Adams.

11. INORGANIC PREPARATIONS. The preparation and purification of inorganic compounds. *Prerequisite:* Chemistry 5. *Second semester. Laboratory, 2–4:30, M. T. Two credits. 102 Chemistry Building.* Professor Adams.

12. INDUSTRIAL CHEMISTRY. Fuels. Iron and Steel. Acid and alkali manufacture. Destructive distillation. Glass. Explosives. Dye stuffs, etc. *Prerequisite:* Chemistry 5 and 7. *First semester. Lectures, 9–10, T. Th. 206 Chemistry Building.* Professor Adams.

20*a*. THESIS COURSE FOR UNDERGRADUATES. Laboratory and library work on special problems, to be chosen by the student in consultation with the instructor. Open to students who have completed Courses 6 and 7. *Second semester. Hours and credits to be arranged. Chemistry Building.* Professor Adams.

XXIX. PHYSICS

PROFESSOR MINOR

1. GENERAL PHYSICS. Mechanics, properties of matter, and heat. *Both semesters. Lectures, 1–2, M. F. Two credits. Laboratory, 2–4:30, F. 6 and 11 Physics Building.* Professor Minor.

2. GENERAL PHYSICS. Sound, light, magnetism, and electricity. Lectures and recitations with experimental illustrations and problems. *Both semesters, 9–10, M. W. F. Three credits. 11 Physics Building.* Professor Minor.

3. PHYSICAL MEASUREMENTS. Experimental work in light,

sound, magnetism, and electricity of distinctly quantitative character. The methods selected involve fundamental physical principles, and illustrate their most important practical applications. *Prerequisite:* Physics 1. *Both semesters, 2–4:30, W. Th. Two credits. 5 Physics Building.* Professor Minor.

5. ELECTRICAL MEASUREMENTS. Precise measurement of current, electromotive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisites:* Physics 1, 2, and 3. *Second semester, 2–4:30, T. W. One or two credits.* Professor Minor and Mr. ————.

6. PHYSICAL OPTICS. Lectures with experimental illustration on selected topics in light, including discussion of wave theory, diffraction, interference, resolving power of optical instruments, dispersion and absorption, spectrum analysis, double refraction, and polarization. *Prerequisite:* Physics 2. *First semester, 8–9, T. Th. Two credits. Not given in 1909–1910.* Professor Minor.

7. PHYSICAL OPTICS. Laboratory exercises in connection with Course 6. *First semester, 2–4:30, M. W. Two credits. Not given in 1909–1910.* Professor Minor and Mr. ————.

8. POLARIZED LIGHT. Methods of producing and detecting plane, circularly, and elliptically polarized light. Practical applications in crystallography, saccharimetry, and metallic reflection. Optical activity. *Prerequisites:* Physics 2 and 3. *Second semester. Lecture, 10–11, T. Laboratory, 2–4:30, T. Two credits. Not given in 1909–1910.* Professor Minor.

9. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisites:* Physics 2. *First semester, 8–9, T. Th. Two credits.* Professor Minor.

20. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Minor.

XXX. MATHEMATICS

PROFESSOR THURTELL

1*a*. ALGEBRA. Special emphasis is placed upon the following subjects: ratio, proportion, variation, progressions,

undetermined coefficients, the binominal theorem, logarithms, series, and the theory of equations. *First semester, 2–3, M. T. F., twelve weeks. Two credits. 107 Morrill Hall.* Professor Thurtell.

2*a*. SOLID GEOMETRY. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester, 2–3, M. T. F., six weeks. One credit. 107 Morrill Hall.* Professor Thurtell.

3*a*. PLANE TRIGONOMETRY. Prominence is given to the relation of functions, transformation of trigonometric expressions, and the derivation of formulas. *Second semester, 2–3, M. T. F., eight weeks. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

4. SPHERICAL TRIGONOMETRY. The solution of all cases of spherical triangles, and the application of spherical trigonometry to elementary problems of practical astronomy. *Second scmester, 2–3, M. T. F., eight weeks. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

7. ANALYTIC GEOMETRY. A study of the straight line, transformation of coordinates, the conic sections, the general equation of the second degree, a few higher plane curves, and an introduction to analytic geometry of three dimensions. *Second semester, 8–9, daily. 107 Morrill Hall.* Professor Thurtell.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of the differential calculus, followed by their application to expansion in series, tangents and normals, contact and curvature, indeterminate forms, maxima and minima. *First semester, 10–11, daily. 107 Morrill Hall.* Professor Thurtell.

9. INTEGRAL CALCULUS. Summation, rectification of curves, areas of plane curves, areas of surfaces of revolution, volumes of solids of revolution, volumes of other solids, moments of inertia. *Second semester, 9–10, daily. 107 Morrill Hall.* Professor Thurtell.

10. ANALYTIC MECHANICS. The development of the essential principles of mechanics followed by exercises in solving practical problems. *Both semesters, 9–10, T. W. Th. 107 Morrill Hall.* Professor Thurtell.

For description of other courses, see Mathematics, College of Engineering.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT McCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.** *Eight semesters, 11–12, M. T. Th. F. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.** *Four semesters, 11–12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.** *Four semesters, 11–12, W. One-half credit.* Lieutenant McClure.

*For exceptions, see Organization of Battalion of Cadets, page 43.

COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE
2. SCHOOL OF DOMESTIC SCIENCE*

*The School of Domestic Science is as yet only partially organized, a complete organization awaiting the accumulation of a sufficient reserve.

COLLEGE OF AGRICULTURE AND DOMESTIC SCIENCE

FACULTY

JOSEPH EDWARD STUBBS.....President
HENRY THURTELL.....Professor of Mathematics and Mechanics
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY.....Professor of Botany, Horticulture, and Forestry
SAMUEL BRADFORD DOTEN.....Professor of Entomology
GORDON HAINES TRUE....Professor of Agriculture and Animal Husbandry
LOWE ABEEL MCCLURE.....Professor of Military Science and Tactics
RALPH SMITH MINOR.....Professor of Physics
MAXWELL ADAMS.....Professor of Chemistry
WINFRED BURDELL MACK.....Professor of Veterinary Science and Bacteriology
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
KATE BARDENWERPER.....Assistant Professor of Domestic Science
SANFORD CROSBY DINSMORE.....Assistant Professor of Agricultural Chemistry
ACHILLES CALLOWAY GOUGH.....Instructor in Mechanical Engineering
ELIZA HENRIETTA OVERMAN.....Assistant in Biology
AMOS ARTHUR HELLER.....Assistant in Botany and Horticulture

AIM

The aim of the School of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operations of farming, gardening, and stock raising, but also to give such training in English, mathematics, and the sciences as will furnish a well-rounded education.

EQUIPMENT

The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, and where representatives of different breeds of pure-bred farm animals are available for class work, furnishes a valuable equipment for the study of those subjects directly related to practical agriculture.

CONDITIONS OF ADMISSION

SCHOOL OF AGRICULTURE

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from the accredited school or not. The examination will be held in September of each year.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects and Credits

1.	English (a)	1 unit*
	English (b)	1 unit
	English (c)	1 unit
2.	Mathematics—Algebra (a)	1 unit
	Mathematics—Algebra and Plane Geometry (b)	1 unit
	Mathematics—Plane Geometry (c)	1 unit
3.	Physics	1 unit
4.	History (a and b)	1 unit
	History (c)	1 unit
7-8.	German or French (a)	1 unit
	German or French (b)	1 unit
	Elective	1 unit

ELECTIVES

5.	Latin	1 unit
10.	Chemistry	1 unit
11.	Physical Geography	½ or 1 unit
12.	Botany	½ or 1 unit
13.	Zoology	1 unit
14.	Physiology	1 unit
15.	Bookkeeping	½ unit

*A unit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout the year, each recitation being of not less than forty minutes duration. Three units represent five recitations a week throughout three years; one-half unit, a half-year's work; two units, two years' work.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing in consultation with the adviser may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

REQUIREMENTS FOR A DEGREE

The Degree of Bachelor of Science in Agriculture is conferred upon students who have satisfactorily completed the full course of study in the School of Agriculture as given below. The term credit denotes the amount of work required by a lecture course meeting one hour a week for one semester, or a laboratory course requiring two and one-half hours a week during one semester.

COURSE OF STUDY

College of Agriculture

First Semester			FRESHMAN	*Second Semester*		
English 1		3		English 1		3
Mathematics 3, 4, and 5		5		Mathematics 3, 4, and 5		5
Zoology 1	(2)	2		Botany 1	(2)	2
Breeds of Live Stock	(2)	2		Horticulture 1	(2)	2
Carpentry		1		Blacksmithing		2
Military 1 and 2		2		Military 1 and 2		2

First Semester			SOPHOMORE	*Second Semester*		
English 4		3		English 4		3
Chemistry 1 and 2	(2)	2		Chemistry 1 and 3	(2)	2
Hygiene 1	(2)	2		Hygiene 1	(2)	2
Fruit Growing or Feeding Animals		2		Vegetable Gardening or Live Stock Registration		2
Economic Botany	(1)	4		Farm Crops	(1)	4
Military 1 and 2		2		Military 1 and 2		2

First Semester		JUNIOR	*Second Semester*	
Stock Judging	5		Soil Physics	5
Chemistry 5	(2) 2		Chemistry 9 and 10	(2) 2
Surveying, C. E. 1	(2) 2		Dairying	(2) 2
Zoology 9	(2) 2		Rural Engineering	(2) 2
Farm Bookkeeping	2		Irrigation, C. E. 11	2
Military 1 and 3	1½		Military 1 and 3	1½

First Semester		SENIOR	*Second Semester*	
Farm Management	(2) 2		Farm Management	(2) 2
Plant or Animal Breeding	5		Veterinary	5
Elective	5		Elective	5
Thesis			Thesis	
Military 1 and 3	1½		Military 1 and 3	1½

ELECTIVES		
Chemistry 20	5	5
Horticulture 2 (Pomology)	5	5
Horticulture 4 (Landscape Gardening)	–	2
Forestry	–	5
Animal Husbandry 4 Selection of Breeding Stock	5	–
Animal Husbandry 4 Feeding of Animals	–	5
Horticulture 3 (Evolution of Cultivated Plants)	3	–

COURSES OF INSTRUCTION

VI.	English.	XXIV.	Entomology.
XVI.	Hygiene.	XXV.	Domestic Science.
XVII.	Botany.	XXVIII.	Chemistry.
XVIII.	Horticulture.	XXX.	Mathematics.
XIX.	Forestry.	XXXIV.	Mechanic Arts.
XX.	Agriculture.	XXXV.	Civil Engineering.
XXI.	Animal Husbandry.		
XXII.	Veterinary Science.	XXXVII.	Military Science and Tactics.
XXIII.	Dairying.		

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. ————.

1. COMPOSITION AND RHETORIC. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 9–10, Section 2, 10–11, daily. Three credits. Stewart Hall.* Mr. ————.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes.

Prerequisite: English 1. *Both semesters, M. W. F. Stewart Hall.* Mr. ————.

XVI. HYGIENE

PROFESSOR FRANDSEN, MISS OVERMAN

1. PHYSIOLOGY AND HYGIENE. Special attention will be given in the second semester to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. 301 Hatch Hall. Laboratory, 2–4:30, F. Three credits. 101 Stewart Hall.* Professor Frandsen and Miss Overman.

For description of other courses, see Hygiene, College of Arts and Science.

XVII. BOTANY

PROFESSOR KENNEDY, PROFESSOR FRANDSEN, MR. HELLER, MISS OVERMAN

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester. Lectures, 8–9, T. Th. 301 Hatch Hall. Laboratory, 2–4:30, M. W. Four credits.* Professor Frandsen.

2. CRYPTOGAMIC BOTANY. Lectures and laboratory. A general resume of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. Illustrated by lantern slides. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:30, T. Th. Four credits. 202 Hatch Hall.* Professor Frandsen.

6. ECONOMIC BOTANY. The nature and treatment of pathological and physiological diseases of plants, weeds, poisonous plants, grasses, and forage plants. *Prerequisite:* Botany 1 and 2. *First semester. Hours to be arranged. Five credits. 303 Stewart Hall.* Professor Kennedy and Mr. Heller.

For description of other courses, see Botany, College of Arts and Science.

XVIII. HORTICULTURE

PROFESSOR KENNEDY, MR. HELLER

1. GENERAL HORTICULTURE. Fruit growing, vegetable gardening, the propagation of plants, the making of lawns,

ornamental shrubs, and the beautifying of home and farm grounds. Practical work in the care of plants, grafting, budding, making cuttings, polination, and pruning. *Second semester. Hours to be arranged. Four credits. 303 Stewart Hall.* Professor Kennedy.

2. POMOLOGY. The cultivation of fruits, with especial reference to the marketing, storing, and adaptability of varieties for cultivation in Nevada. *Both semesters. Hours to be arranged. Five credits. 303 Stewart Hall.* Professor Kennedy.

3. THE EVOLUTION OF CULTIVATED PLANTS. The discussion of organic evolution as applied to the modification of plants, particularly those in cultivation. *Prerequisite:* Botany 1 and 2. *Both semesters. Hours to be arranged. Three credits. 303 Stewart Hall.* Professor Kennedy.

4. LANDSCAPE GARDENING. The general principles governing outdoor art; with sundry suggestions for their application in the commoner problems of gardening. *Waugh:* Landscape Gardening. *Prerequisite:* none. *Second semester. Hours to be arranged. Two credits. 303 Stewart Hall.* Professor Kennedy.

5. VEGETABLE GARDENING. The general principles underlying the growing of vegetables for market, both under glass and in the open. *Green:* Vegetable Gardening. *Prerequisite:* none. *Second semester. Hours to be arranged. Two credits. 303 Stewart Hall.* Professor Kennedy.

6. FRUIT GROWING. *Bailey:* Principles of Fruit Growing. *First semester. Hours to be arranged. Two credits. 303 Stewart Hall.* Professor Kennedy and Mr. Heller.

7. PLANT BREEDING. The fundamental principles governing the amelioration of plants and the methods of producing new varieties of grains, fruits, and ornamental plants. *De Vries:* Plant Breeding. *Bailey:* Plant Breeding. *Prerequisites:* Horticulture 1 and Botany 1. *First semester. Hours to be arranged. Five credits. 303 Stewart Hall.* Professor Kennedy.

XIX. FORESTRY

PROFESSOR KENNEDY

1. ELEMENTARY FORESTRY. The effects of deforestation on the water supply, forest protection, and regeneration; the use and durability of the different woods, and forest economics. *Prerequisite:* Botany 1. *Second semester. Hours*

to be aranged. Five credits. 303 Stewart Hall. Professor Kennedy.

XX. AGRICULTURE

PROFESSOR TRUE

1. FARM CROPS. A study of the various field crops, their economic importance and how to grow and market them. Lectures and field work. *Hunt:* The Cereals of America. *Second semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

2. SOIL PHYSICS. A study of the nature, functions, origin, texture, composition, and kinds of soil; the relations of soil, and water, air, and sunlight; the treatment of soils to maintain fertility and their cultivation in connection with the growing of crops. *Second semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

3. FARM MANAGEMENT. Discussion of farm problems, such as those relating to the selection of a farm, types of farming, the laying out and equipment of farms, and the business affairs connected with farming. It is also contemplated to give the student actual practice in farm management. *First semster. Hours to be arranged. Four credits. 101 Hatch Hall.* Professor True.

XXI. ANIMAL HUSBANDRY

PROFESSOR TRUE

1. BREEDS OF LIVE STOCK. A study of the origin, development, characteristics, and uses of the pure breeds of farm animals. For illustration the animals of the University Farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *First semester. Hours to be arranged. Four credits. 101 Hatch Hall.* Professor True.

2. ANIMAL BREEDING. A discussion of the principles underlying the art of breeding, the aim of which is to develop, maintain, and improve the various breeds and types of farm animals and farm crops, studied with special reference to their application to the breeding of farm animals. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

3. FEEDING ANIMALS. A study of the principles underlying, and problems connected with, the feeding of farm

animals. *Smith:* Profitable Stock Feeding. *First semester. Hours to be arranged. Two credits. 101 Hatch Hall.* Professor True.

4. STOCK JUDGING. Practice in judging live stock, the aim of which shall be to make the student familiar with the points of excellence in the various breeds of farm animals. *Craig:* Judging Live Stock. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

5. LIVE STOCK REGISTRATION. A course intended to familiarize the student with the details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them, a study of pedigrees, and how to keep herd records. *Second semester. Hours to be arranged. Two credits. 101 Hatch Hall.* Professor True.

XXII. VETERINARY SCIENCE

PROFESSOR MACK

1. VETERINARY SCIENCE. This course is designed to give the student some familiarity with the more common ailments of domesticated animals, and such knowledge of the nature of disease as to enable him to maintain sanitary conditions, and to intelligently combat infection. *Second semester. Hours to be arranged. Daily. 204 Hatch Hall.* Professor Mack.

XXIII. DAIRYING

BUTTER MAKING. Practical butter making, including the use of the hand separator, the ripening of cream, churning, working and the putting up of butter for market, and the use of the Babcock tester. Lectures on the formation and composition of milk; ferments and their action; testing for purity and value; methods of manufacturing butter and cheese.

XXIV. ENTOMOLOGY

PROFESSOR DOTEN

1. ECONOMIC ENTOMOLOGY. Lectures with field work on destructive insect pests. Discussion of their life histories, and the best means of combating them. *First semester. Hours to be arranged. Four credits.* Professor Doten.

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

1*b*. TEXTILES. The history and the hygiene of dress.

Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2*b*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3*b*. HISTORY OF COOKERY. Food adulterations. Dietetic errors. Invalid cookery. Chafing-dish course. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

XXXV. CIVIL ENGINEERING

RURAL ENGINEERING. A course including road building and maintenance, the construction of irrigation and drainage works for the farm, the construction of farm buildings, the use of concrete in farm construction, the use of motors, engines, and other farm machinery.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, ASSISTANT PROFESSOR DINSMORE, MR. ————.

1. GENERAL INORGANIC CHEMISTRY. Lectures and recitations on the elementary theories and principles of chemistry. *Both semesters. Lectures, 1–2, T. Th. 206, 101 Chemistry Building.* Professor Adams.

2. GENERAL INORGANIC CHEMISTRY. A laboratory course illustrating and verifying the fundamental laws of Chemistry. *First semester. Laboratory, 2–4:30, W. Th. Two credits. 101 Chemistry Building.* Professor Adams and Mr. ————.

3. QUALITATIVE ANALYSIS. *Prerequisites:* First half of 1 and all of 2. *Second semester. Laboratory, 2–4:30, W. Th. Two credits. 101 Chemistry Building.* Professor Adams and Mr. ————.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisite:* 3. *First semester. Laboratory, 2–4:30, F., 8–12, Sat. Two credits. 102 Chemistry Building.* Professor Adams.

9. AGRICULTURAL CHEMISTRY. A lecture course on the application of chemical principles to farm economy. The relation of the plant to the soil and air; sources of plant food; forage plants and the value of various stock foods. Soils—their origin, formation, composition, deterioration, and improvement. *Prerequisite:* 5. *Both semesters, 9–10, M. W. 206 Chemistry Building.* Assistant Professor Dinsmore.

10. AGRICULTURAL CHEMICAL ANALYSIS. A course given in connection with 9. This course includes the analysis of farm and dairy products, soils, fertilizers, and irrigation waters. *Both semesters. Laboratory, 2–4:30, T. W. Two credits. 208 Chemistry Building.* Professor Adams and Assistant Professor Dinsmore.

20*b*. THESIS COURSE FOR UNDERGRADUATES. Laboratory and library work on special problems, to be chosen by the student in consultation with the instructor. *Both semesters. Hours to be arranged. Five credits. Chemistry Building.* Professor Adams.

For description of other courses, see Chemistry, College of Arts and Science.

XXX. MATHEMATICS

PROFESSOR THURTELL

1*a*. ALGEBRA. Special emphasis is placed on the following subjects: Ratio, proportion, variation, progressions, undetermined coefficients, the binomial theorem, logarithms, series, and the theory of equations. *First semester, 2–3, M. T. F., twelve weeks. Two credits. 107 Morrill Hall.* Professor Thurtell.

2*a*. SOLID GEOMETRY. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester, 2–3, M. T. F., six weeks. One credit. 107 Morrill Hall.* Professor Thurtell.

3*a*. PLANE TRIGONOMETRY. This course covers the subject as presented in such texts as Wells, Wentworth, Murray, and Crockett. Prominence is given to the relation of functions, transformation of trigonometric expressions and the derivation of formulas. *Second semester, M. T. F., eight weeks. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

4. SPHERICAL TRIGONOMETRY. The solution of all classes of spherical triangles and the application of spherical trigo-

nometry to elementary problems of practical astronomy. *Second semester, 2–3, M. T. F. One and one-half credits. 107 Morrill Hall.* Professor Thurtell.

For description of other courses, see Mathematics, College of Arts and Science, and College of Engineering.

XXXIV. MECHANIC ARTS

MR. GOUGH, MR. CLINGMAN

1. BENCH WORK AND WOOD TURNING. *Both semesters. Hours to be arranged. Two credits. 201 Mechanical Building.* Mr. Gough and Mr. Clingman.

For description of other courses, see Mechanic Arts, College of Engineering.

XXXV. CIVIL ENGINEERING

PROFESSOR BOARDMAN

1. SURVEYING. The use and adjustments of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room in land surveying, topographic, hydrographic, mining, and city surveying. *First semester only. Recitations or lectures, 1–2. Field or Drafting, 2–4:30, Th. F. Four credits.* Professor Boardman.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT McCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.* Eight semesters, 11–12, M. T. Th. F. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.* Four semesters, 11–12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.* Four semesters, 11–12, W. One-half credit.* Lieutenant McClure.

*For exceptions, see Organization of Battalion of Cadets, page 43.

COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

COLLEGE OF ENGINEERING

FACULTY

JOSEPH EDWARD STUBBS President
HENRY THURTELL Professor of Mathematics and Mechanics
GEORGE J. YOUNG Professor of Mining and Metallurgy
JAMES GRAVES SCRUGHAM Professor of Mechanical Engineering
LOWE ABEEL MCCLURE Professor of Military Science and Tactics
W. S. TANGIER SMITH Professor of Geology and Mineralogy
RALPH SMITH MINOR Professor of Physics
MAXWELL ADAMS Professor of Chemistry
HERBERT WYNFORD HILL Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN Professor of Civil Engineering
KATHERINE LEWERS Assistant Professor of Art
ACHILLES CALLOWAY GOUGH Instructor in Mechanical Engineering
JAY ARNOLD CARPENTER Assistant in Metallurgy
EARL NEWTON CLINGMAN Assistant in Mechanical Engineering

AIM

The aim of the College of Engineering is to equip the young men who wish to share actively in the industrial development of the State and the Nation with such knowledge of mining, mechanical and civil engineering as is essential for entrance into these professions.

EQUIPMENT

In a College of Engineering the material equipment is of great importance and the University has made a special effort to properly provide the necessary laboratories, workshops, etc. For a general description of these see under the titles Mackay Mining Building, Mechanical Building, Chemistry Building, Laboratories for Geology and Mineralogy, Laboratories of the Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

CONDITIONS OF ADMISSION

1. Entrance to the Engineering Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized

in so far as the work done is equivalent to the work done here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English Composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects and Credits

1.	English (a)	1 unit*
	English (b)	1 unit
	English (c)	1 unit
2.	Mathematics—Algebra (a)	1 unit
	Mathematics—Algebra and Plane Geometry (b)	1 unit
	Mathematics—Plane Geometry (c)	1 unit
	Mathematics—Solid Geometry (d)	½ unit
3.	Physics	1 unit
4.	English History (a)	½ or 1 unit
	Ancient History (b)	½ or 1 unit
	American History and Civics (c)	1 unit
5.	Latin (a)	1 unit
	Latin (b)	1 unit
	Latin (c)	1 unit
6.	Greek (a)	1 unit
	Greek (b)	1 unit
7.	German (a)	1 unit
	German (b)	1 unit
8.	French (a)	1 unit
	French (b)	1 unit
9.	Spanish (a)	1 unit
	Spanish (b)	1 unit
10.	Chemistry	1 unit
11.	Physical Geography	½ or 1 unit
12.	Botany	½ or 1 unit
13.	Zoology	½ or 1 unit
14.	Physiology	1 unit
15.	Bookkeeping	½ unit
16.	Shopwork	1 unit
17.	Drawing	½ unit

*A unit, as the measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than forty minutes duration. Three units represent daily recitations throughout three years; one-half unit, a half-year's work with daily recitations. A total of fourteen units is required.

For entrance to the Engineering Schools the candidate must present subjects 1, 2, 3, 4*c*, 10, and 4½ additional units selected from the subjects 4*a*, 4*b*, and 5 to 17, inclusive.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the department concerned.

REQUIREMENTS FOR A DEGREE

THE BACCALAUREATE DEGREE

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical Engineering, upon students who have satisfactorily completed the full course of study in the School of Mechanical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

REQUIREMENTS FOR DEGREES OF MINING ENGINEER, MECHANICAL ENGINEER, AND CIVIL ENGINEER

Presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) One year's post-graduate work on subjects selected with the approval of the head of the department in which the degree is sought, or

(*b*) Three years' experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

COLLEGE OF ENGINEERING

COURSE OF STUDY

FRESHMAN YEAR—ALL SCHOOLS

First Semester		*Second Semester*	
Mathematics 3 and 4	5	Mathematics 5 and 7	5
English 1	5	English 1	5
Drawing 1 and 2	2	Drawing 1 and 2	2
Mechanic Arts 1	2 Lab.	Mechanic Arts 1	2 Lab.
Chemistry 1	2	Mechanic Arts 2	2 Lab.
Chemistry 2	2 Lab.	Chemistry 1	2
Physics 1	1 and 1 Lab.	Chemistry 3	2 Lab.
Drill 1 and 2	2	Physics 1	1 and 1 Lab.
		Drill 1 and 2	2

SCHOOL OF MINES

SOPHOMORE

First Semester		*Second Semester*	
Mathematics 8 and 9	5	Mathematics 8 and 9	5
Chemistry 5	3 Lab.	Chemistry 6	3 Lab.
Physics 2	3	Physics 2	3
Physics 3	2 Lab.	Physics 3	2 Lab.
Mineralogy 1	2 Lab.	Mineralogy 1	2 Lab.
Drawing 3	2	Drawing 4	2
M. E. 1	2	M. E. 1	2
Drill 1 and 2	2	Drill 1 and 2	2

Summer work in Mining. Each regular mining student must give evidence of having performed at least one month of practical mining work. He is advised to spend at least one summer in practical work about a mine or reduction plant. (Effective June 10, 1910.)

JUNIOR

First Semester		*Second Semester*	
Mining 7	7	Mining 7	7
Mining 11 and 12	2	Mining 11 and 12	3
Mineralogy 2	2	Mineralogy 2	2
Geology 1*a*	3	Geology 1*b*	2
Mathematics 10 and 11	5	Mathematics 10	3
Civil Engineering 9	2 and 1 Lab.	Mineralogy 4 and 5	3
Civil Engineering 1	2 and 2 Lab.	Civil Engineering 1	2 and 2 Lab.
Mining 4	2 Lab.	Geology 4, Field work	2 Lab.
Drill 1 and 3	1½	Drill 1 and 3	1½

On completion of Junior Year work regular mining students are required to take Courses No. —— and No. ——.

Course No. ——. Four weeks' summer school in mine and topographical surveying.

Course No. ——. Three weeks' summer school in mining and field geology.

SENIOR

First Semester		*Second Semester*	
Mining 1	4	Mining 2	4
Mining 3	1	Mining 3	1
Mining 8	4	Mining 5	Field work
Geology 4	1 Lab.	Mining 6	1
Mining 10	2	Mining 9	4
Geology 2 and 3	3	Mining 10	2
Civil Engineering 8	3	Geology 5	3
Drill 1 and 3	1½	Thesis	2
		Drill 1 and 3	1½

SCHOOL OF MECHANICAL ENGINEERING

First Semester		SOPHOMORE	*Second Semester*	
Mathematics 8 and 9	5		Mathematics 8 and 9	5
Drawing 3	2		M. E. 2	2
Physics 2	3		Drawing 4	2
Physics 3	2 Lab.		Physics 2	3
Mechanic Arts	2 Lab.		Physics 3	2 Lab.
Mechanical Engineering 1	2		Mechanic Arts 3	2 Lab.
Chemistry 5	3 Lab.		Mechanical Engineering 1	2
Drill 1 and 2	2		Drill 1 and 2	2

First Semester		JUNIOR	*Second Semester*	
Mathematics 10 and 11	5		Mathematics 10	3
Civil Engineering 9	2 and 1 Lab.		Mechanical Engineering 3	2
Mining 7	2		Electrical Engineering 2	3
Electrical Engineering 1	3		Mechanical Engineering 4	2
Drawing 5	3 Lab.		Drawing 6	3 Lab.
Civil Engineering 1	2 and 2 Lab.		Civil Engineering 1	2 and 2 Lab.
Drill 1 and 3	1½		Drill 1 and 3	1½

First Semester		SENIOR	*Second Semester*	
Electrical Engineering 3	3		Electrical Engineering 4	2
Mechanical Engineering 5	4		Electrical Engineering 5	1
Civil Engineering 5	4		Mechanical Engineering 6	3
Drawing 7	3		Mechanical Engineering 7	1
Civil Engineering 8	3		Drawing 7	3
Mechanical Engineering 10	2		Mechanical Engineering 8	2
Drill 1 and 3	1½		Mining 6	1
			Thesis	2
			Elective	3
			Drill 1 and 3	1½

SCHOOL OF CIVIL ENGINEERING

First Semester		SOPHOMORE	*Second Semester*	
Mathematics 8 and 9	5		Mathematics 8 and 9	5
Drawing 3	2		Drawing 3*a*	1 Lab.
Chemistry 5	3 Lab.		Drawing 4	2
Physics 2	3		Physics 2	3
Physics 3	2 Lab.		Physics 3	2 Lab.
Mineralogy 1	2 Lab.		M. E. 2	2
M. E. 1	2		M. E. 1	2
Drill 1 and 2	2		M. A. 3	2
			Drill 1 and 2	2

First Semester		JUNIOR	*Second Semester*	
Mathematics 10 and 11	5		Mathematics 10	3
Civil Engineering 1	2 and 2 Lab.		Mathematics 11	2
Civil Engineering 9	1 and 1 Lab.		Civil Engineering 1	2 and 2 Lab.
Geology 1*a*	3		Civil Engineering 12	1 month
Electrical Engineering 1	3		Geology 1*b*	2
Mining 7	2		Civil Engineering 6	3
Drill 1 and 3	1½		Mining 7	2
			C. E. 7	2 and 1 Lab.
			Geology 4	2 Lab.
			Drill 1 and 3	1½

First Semester		SENIOR	*Second Semester*	
Mining 1	4		Civil Engineering 11	2
Civil Engineering 3	5		Mining 6	1
Civil Engineering 5	3 and 2 Lab.		Civil Engineering 4	5
Civil Engineering 8	3		Civil Engineering 2	2 Lab.
Civil Engineering 2	2		Civil Engineering 10	2
Drill 1 and 3	1½		Elective	3
			Thesis	2
			Drill 1 and 3	1½

COURSES OF INSTRUCTION

VI.	English.	XXXII.	Mech. Engineering.
XXVI.	Geology.	XXXIII.	Elec. Engineering.
XXVII.	Mineralogy.	XXXIV.	Mechanic Arts.
XXVIII.	Chemistry.	XXXV.	Civil Engineering.
XXIX.	Physics.	XXXVI.	Drawing.
XXX.	Mathematics.	XXXVII.	Military Science and Tactics.
XXXI.	Mining.		

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. ————.

1. COMPOSITION AND RHETORIC. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, Section 1, 9–10, Section 2, 10–11, daily. Three credits. 5 Stewart Hall.* Mr. ————.

For description of other courses, see English, College of Arts and Science.

XXVI. GEOLOGY

PROFESSOR SMITH

1*a*. DYNAMIC AND STRUCTURAL GEOLOGY. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10–11, M. W. F. Mackay Mining Building.* Professor Smith.

1*b*. HISTORICAL GEOLOGY. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American continent. Lectures and recitations. *Prerequisite:* Geology 1. *Second semester, 10–11, M. F. Mackay Mining Building.* Professor Smith.

NOTE—Credits are reckoned on the semester basis. When not otherwise specified, the credits are equivalent to the number of recitations per week.

2. ELEMENTARY PETROLOGY. Lectures on the classification, characters, and origin of rocks. *Prerequisites:* Geology 1 and Mineralogy 4. *First semester, 1–2, M. W. Mackay Mining Building.* Professor Smith.

3. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen and in thin sections with the microscope. *Prerequisites:* Mineralogy 5 and Geology 3 (the latter may be taken concurrently). *First semester, 1–4, F. One credit. Mackay Mining Building.* Professor Smith.

4. FIELD GEOLOGY. Instruction in field methods with actual practice in the investigation of selected areas. Five days of field work are given in the second semester of the Junior year, a part of this time being devoted to the mapping of some area in the vicinity of the University. During the summer vacation of the Junior year, the members of this class are expected to spend three weeks in the mapping and study of some selected field, preferably a mining camp, where both the underground and surface geology may be investigated. A concise report of this work, together with well-kept field notes, a finished geological map, and cross-sections, will be required of each member of the class. The office work required for the completion of the mapping will be done during the first semester of the Senior year, at times to be arranged, when occasional lectures on the theoretical aspects of the work will also be given. *Prerequisite:* Geology 1. *Both semesters. Hours to be arranged. Three credits.* Professor Smith.

5. ECONOMIC GEOLOGY. A study of the modes of occurrence, origin, and distribution of the principal ores, nonmetallic minerals and rocks used in the arts or industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Mineralogy 3, Geology 1, 2, and 3. *Second semester, 10–11, T. W. Th. Mackay Mining Building.* Professor Smith.

6. THE NATURE AND ORIGIN OF SOILS. Lectures and outside reading. *Prerequisites:* Geology 1 and Mineralogy 1. *Second semester. Hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits. Mackay Mining Building.* Professor Smith.

21. GRADUATE COURSE. Original investigation of geologi-

cal problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH

1. DETERMINATIVE MINERALOGY. (*a*) The determination of the more common minerals chiefly by means of their physical properties, using such simple physical tests as are of easy application in the field. (*b*) The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 1, 2, and 3. *Both semesters, 2–4:30, M. T. Mackay Mining Building.* Professor Smith.

2. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11. Laboratory, 2–4:30, W. Mackay Mining Building.* Professor Smith.

3. DESCRIPTIVE MINERALOGY. Lectures on the classification, salient properties, and mode of occurrence of the more important minerals, illustrated by typical specimens. *Prerequisites:* Mineralogy 2 and first semester of Mineralogy 1. *Second semester, 9–10, Th. F. Mackay Mining Building.* Professor Smith.

4. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Physics 2 and 3, Mineralogy 2. *Second semester, 1–2, M. T. Mackay Mining Building.* Professor Smith.

5. OPTICAL PROPERTIES OF MINERALS. Microscopic study and determination of rock-making minerals in thin section, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently.) *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

6. GRADUATE COURSE. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith.

XXVIII. CHEMISTRY

PROFESSOR ADAMS

1. GENERAL INORGANIC CHEMISTRY. Lectures and recitations on the elementary theories and principles of chemistry.

Both semesters. Lectures, 1–2, T. Th. 206, 101 Chemistry Building. Professor Adams.

2. GENERAL INORGANIC CHEMISTRY. A laboratory course illustrating and verifying the fundamental laws of chemistry. *First semester. Laboratory, 2–4:30, W. Th. Two credits. 101 Chemistry Building.* Professor Adams.

3. QUALITATIVE ANALYSIS. *Prerequisites:* First half of Chemistry 1 and all of Chemistry 2. *Second semester. Laboratory, 2–4:30, W. Th. Two credits. 101 Chemistry Building.* Professor Adams.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisite:* Chemistry 3. *First semester. Laboratory, 2–4:30, F., 8–12, Sat. Two credits. 102 Chemistry Building.* Professor Adams.

6. ADVANCED QUANTITATIVE ANALYSIS. Special problems in analytical chemistry will be assigned to meet the demands of the individual student and the department in which he wishes to take his degree. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, F., 8–12, Sat. Three credits. 102 Chemistry Building.* Professor Adams.

For description of other courses, see Chemistry, College of Arts and Science, and College of Agriculture.

XXIX. PHYSICS

PROFESSOR MINOR

1. GENERAL PHYSICS. Mechanics, properties of matter and heat. *Both semesters. Lectures, 1–2, M. F. Two credits. Laboratory, 2–4:30, F. 6 and 11 Physics Building.* Professor Minor.

2. GENERAL PHYSICS. Lectures and recitations with experimental illustrations and problems. Sound, light, magnetism, and electricity. *Prerequisite:* Physics 1. *Both semesters, 9–10, M. W. F. Three credits. 11 Physics Building.* Professor Minor.

3. PHYSICAL MEASUREMENTS. Experimental work in sound, light, magnetism, and electricity of distinct quantitative character. Methods selected involving fundamental physical principles and illustrating their most important practical application. *Prerequisite:* Physics 1. *Both semesters, 2–4:30, W. Th. Two credits. 5 Physics Building.* Professor Minor.

5. ELECTRICAL MEASUREMENTS. Precise measurement of current, electromotive force and power, with both alternating and direct current. Calibration of instruments. Determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisite:* Physics 1, 2, and 3. *First semester, 2–4:30, T. W. One or two credits.* Professor Minor and Mr. ————.

20. THESIS COURSE. Undergraduate thesis work and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Minor.

XXX. MATHEMATICS

PROFESSOR THURTELL

1*b*. ALGEBRA. Special emphasis is placed upon ratio, proportion, variation, progressions, undertermined coefficients, the binomial theorem, logarithms, series, and the theory of equations. *First semester, eight weeks, 8–9, daily. Two credits. 107 Morrill Hall.* Professor Thurtell.

2*b*. SOLID GEOMETRY. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester, four weeks, 8–9, daily. One credit. 107 Morrill Hall.* Professor Thurtell.

3*b*. PLANE TRIGONOMETRY. Prominence is given to the relation of functions, transformation of trigonometric expressions, the derivation of formulas, and solution of triangles. *First semester, six weeks, 8–9, daily. Two credits. 107 Morrill Hall.* Professor Thurtell.

7. ANALYTIC GEOMETRY. A study of the straight line, transformation of coordinates, the conic sections, the general equation of the second degree, a few higher plane curves, and an introduction to analytic geometry of three dimensions. *Second semester, 10–11, daily. Five credits. 107 Morrill Hall.* Professor Thurtell.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of the differential calculus, followed by their application to expansion in series, tangents and normals, contact and curvature, indeterminate forms, maxima and minima. *First semester, 10–11, daily. Five credits. 107 Morrill Hall.* Professor Thurtell.

9. INTEGRAL CALCULUS. Summation, rectification of curves, areas of plane curves, areas of surfaces of revolution, volumes

of solids of revolution, volumes of other solids, moments of inertia. *Second semester, 9–10, daily. Five credits. 107 Morrill Hall.* Professor Thurtell.

10. ANALYTIC MECHANICS. The development of the essential principles of mechanics, followed by exercise in solving practical problems. *Both semesters, 9–10, M. T. F. Six credits. 107 Morrill Hall.* Professor Thurtell.

11. MECHANICS OF MATERIALS. Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *First semester, W. Th. Two credits. 107 Morrill Hall.* Professor Thurtell.

For description of other courses, see Mathematics, College of Arts and Science.

XXXI. MINING AND METALLURGY

PROFESSOR YOUNG, MR. CARPENTER

1. MINING. (General.) Excavation, explosives, tunneling, boring, shaft-sinking. *First semester, 9–10, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

2. MINING. (General.) Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, management, mine equipment, mining law. *Second semester, 9–10, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

3. MINING. (Laboratory.) Problems in engineering and in the design of mining and metallurgical machinery; review and discussion of technical journals and books. *First semester, 2–4:30, M. Second semester, 2–4:30, W. One credit. Mining Lecture Room, Mackay Mining Building.* Professor Young and Mr. Carpenter.

4. MINING. (Laboratory.) The work in this course consists of practice in sharpening and tempering hand and machine drills, in the use of these, and in forging and welding. *First semester, 8–12, Sat. Two credits. Mining Laboratory and Forge Shop, Mackay Mining Building.* Professor Young.

5. EXCURSIONS. During the year two extended trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit. The surface and underground

conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formations is also done in order to facilitate interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide, and reduction plants. A report of the observations, together with sketches, is required of each student. *Open to Seniors, School of Mines.* Professor Young.

6. ENGINEERING CONTRACTS AND SPECIFICATIONS. *Second semester, 8–9, M. Mining Lecture Room, Mackay Mining Building.* Professor Young.

7. METALLURGY. (General.) Lectures and recitations. Physical properties of the more important metals and alloys; manufacture and physical properties of the structural metals; fuel and heat measurement; metallurgical furnaces, processes, and products; crushing and sampling of ores. *Prerequisites:* Chemistry 1, 2, 3, Mineralogy 1. *Both semesters, 8–9, T. Th. Mining Lecture Room, Mackay Mining Building.* Professor Young and Mr. Carpenter.

8. METALLURGY. (Gold and Silver.) Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 7. *First semester, 10–11, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

9. METALLURGY. (Copper, Lead, Zinc.) Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 7. *Second semester, 10–11, M. T. Th. F. Mining Lecture Room, Mackay Mining Building.* Professor Young.

10. METALLURGY. (Laboratory.) A series of experiments are given which are designed to supplement, in part, the classroom work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to supplement the small-scale experiments. *Prerequisites:* Metallurgy 7, Chemistry 5 and 6. *First semester, 2–4:30, W. Th. Second semester, 2–4:30, Th. F. Two credits. Metallurgical Laboratory, Mackay Mining Building.* Professor Young.

11. ASSAYING. Lectures and recitations. Methods of assay, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying, errors and losses in assaying, special topics. *Prerequisites:* Chemistry 1, 2, 3, 5, 6, Mineralogy 1. *Both semesters, 8–9, W. Mining Lecture Room, Mackay Mining Building.* Professor Young and Mr. Carpenter.

12. ASSAYING. (Laboratory.) Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miners' pan, horn and batea. *Prerequisites:* Chemistry 1, 2, 3, 5, 6, Mineralogy 1. *First semester, 2–4:30, M. One credit. Assaying Laboratory, Mackay Mining Building.* Professor Young and Mr. Carpenter.

Second semester, 2–4:30, M. T. Two credits. Assaying Laboratory, Mackay Mining Building. Professor Young and Mr. Carpenter.

13. FIRST AID AND HYGIENE. A course of six lectures in second semester of Senior year. Required of all regular Senior mining students. *Hours to be arranged.* Professor Frandsen.

14. MINING LAW. A course of six lectures in second term of Senior year. Required of all regular Senior mining students. Special lectures. *Hours to be arranged.*

15. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work must cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations and to put at least one whole vacation period into practical work.

20. THESIS. Each Senior student is required to hand in a thesis on some subject in mining or metallurgy or related branch of engineering. *Second semester. Hours to be arranged. Two credits.* Professor Young.

XXXII. MECHANICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. GOUGH

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers.

Both semesters, 9–10, T. Th. 1 Mechanical Building. Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, and the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits. 1 Mechanical Building.* Mr. Gough.

3. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *Second semester, 9–10, M. F. 1 Mechanical Building.* Mr. Gough.

4. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horsepowers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 10–11, M. T. 1 Mechanical Building.* Professor Scrugham.

5. STEAM ENGINE. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10, M. T. Th. F. 1 Mechanical Building.* Mr. Gough.

6. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases and oil is discussed and comparative costs and efficiencies considered. *Second semester, 9–10, M. W. F. 1 Mechanical Building.* Professor Scrugham.

7. POWER PLANTS. The mechanical engineering of power plants is here presented in a non-mathematical way, and the machinery appliances and economical auxiliaries employed have their practical and experimental side shown. *Second semester, 1–2, W. 1 Mechanical Building.* Professor Scrugham.

8. VALVE GEARING. A study of the various forms of engine valves, link motions, radial gears, and shaft regulation. Each student must design some form of standard

11. ASSAYING. Lectures and recitations. Methods of assay, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying, errors and losses in assaying, special topics. *Prerequisites:* Chemistry 1, 2, 3, 5, 6, Mineralogy 1. *Both semesters, 8–9, W. Mining Lecture Room, Mackay Mining Building.* Professor Young and Mr. Carpenter.

12. ASSAYING. (Laboratory.) Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miners' pan, horn and batea. *Prerequisites:* Chemistry 1, 2, 3, 5, 6, Mineralogy 1. *First semester, 2–4:30, M. One credit. Assaying Laboratory, Mackay Mining Building.* Professor Young and Mr. Carpenter.

Second semester, 2–4:30, M. T. Two credits. Assaying Laboratory, Mackay Mining Building. Professor Young and Mr. Carpenter.

13. FIRST AID AND HYGIENE. A course of six lectures in second semester of Senior year. Required of all regular Senior mining students. *Hours to be arranged.* Professor Frandsen.

14. MINING LAW. A course of six lectures in second term of Senior year. Required of all regular Senior mining students. Special lectures. *Hours to be arranged.*

15. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work must cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations and to put at least one whole vacation period into practical work.

20. THESIS. Each Senior student is required to hand in a thesis on some subject in mining or metallurgy or related branch of engineering. *Second semester. Hours to be arranged. Two credits.* Professor Young.

XXXII. MECHANICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. GOUGH

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers.

Both semesters, 9–10, T. Th. 1 Mechanical Building. Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, and the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits. 1 Mechanical Building.* Mr. Gough.

3. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *Second semester, 9–10, M. F. 1 Mechanical Building.* Mr. Gough.

4. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horsepowers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 10–11, M. T. 1 Mechanical Building.* Professor Scrugham.

5. STEAM ENGINE. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10, M. T. Th. F. 1 Mechanical Building.* Mr. Gough.

6. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases and oil is discussed and comparative costs and efficiencies considered. *Second semester, 9–10, M. W. F. 1 Mechanical Building.* Professor Scrugham.

7. POWER PLANTS. The mechanical engineering of power plants is here presented in a non-mathematical way, and the machinery appliances and economical auxiliaries employed have their practical and experimental side shown. *Second semester, 1–2, W. 1 Mechanical Building.* Professor Scrugham.

8. VALVE GEARING. A study of the various forms of engine valves, link motions, radial gears, and shaft regulation. Each student must design some form of standard

engine valve and governor, the data being taken from t catalogues and engines actually in use. *Second seme 1–4:30, Th. Two credits. 1 Mechanical Building.* Gough.

10. ENGINEERING LABORATORY PRACTICE. This co covers the various methods of conducting and working tests, determining efficiencies, driving powers, etc., an supplemented by practical tests on a number of piece apparatus. *First semester, 10–11, T. Th. 1 Mechan Building.* Professor Scrugham.

19. INSPECTION VISITS. The most important enginee establishments in the vicinity are visited in order that student may make a study of modern structures and meth in manufacture. *Open to Juniors and Seniors, School Mechanical Engineering.* Professor Scrugham.

20. THESIS COURSE. The designing of a machine or original investigation of some subject congenial to the s dent's taste and included in the scope of the curricul *Second semester. Hours to be arranged. Two credits.* P fessor Scrugham.

XXXIII. ELECTRICAL ENGINEERING

PROFESSOR SCRUGHAM

1. DIRECT CURRENT MACHINERY. Fundamental prin ples, theory, characteristics, operation, and construction dynamos, motors, storage batteries, etc. *Prerequisite:* Phys 2. *First semester, 10–11, M. W. F. Three credits. 1 Mecha ical Building.* Professor Scrugham.

2. ELECTRIC LIGHTING, WIRING, AND DISTRIBUTION. *Prerequisite:* E. E. 1 *Second semester, 10–11, W. Th. F. 1 Mechanical Building.* Professor Scrugham.

3. ALTERNATING CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* E. E. 1. *First semester, 1–2, W. Th. F. 1 Mechanical Building.* Professor Scrugham.

4. APPLIED ELECTRICITY. Application of electricity to machine tools, pumps, hoists, cranes, railways, etc. *Second semester, 1–2, M. T. 1 Mechanical Building.* Professor Scrugham.

5. ELECTRIC LABORATORY. Use and care of electrical

instruments. Tests of generators, motors, transformers, etc. *Second semester, 2–4:30, F. One credit. 1 Mechanical Building.* Professor Scrugham.

XXXIV. MECHANIC ARTS

MR. GOUGH, MR. CLINGMAN

1. Wood Work. The students are taught the use of hand and machine tools and the most approved methods and processes following in engineering construction. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenter's tools. The wood-turning involves the various principles of lathe work in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. *Both semesters, 2–4:30, M. T. Two credits. 1 Mechanical Building.* Mr. Gough and Mr. Clingman.

2. Forging. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches. drills, chisels, annealing, case-hardening, and the making of a complete set of machine cutting tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, M. T., Section 2, 8–12, Sat. Two credits. 1 Mechanical Building.* Mr. Gough.

3. Machine Work. Instruction in this work consists of vise work in iron, including surface chipping, squaring and fitting, round filing, sawing, scraping and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work, and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, M. T. Two credits. 102 Mechanical Building.* Mr. Gough.

XXXV. CIVIL ENGINEERING

PROFESSOR BOARDMAN

1. SURVEYING. The use and adjustments of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room in land surveying, topographic, hydrographic, mining, and city surveying. *Both semesters for all engineering students. Recitations or Lectures, 1–2, Field or Drafting, 2–4:30, Th. F. Four credits.* Professor Boardman.

2. REINFORCED CONCRETE. Its principles and applications. *First semester. Recitations and Lectures. Two credits. Second semester. Design. Two credits. Hours to be arranged for each semester.* Professor Boardman.

3. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester, 10–11, daily.* Professor Boardman.

4. STRUCTURAL DESIGN. General features and details of design, estimates of weight and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester, 9–11, daily.* Professor Boardman.

5. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester, 1–2, M. T., 9–10, W. Field or Drafting, 2–4:30, M. T. Five credits.* Professor Boardman.

6. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester, 10–11, T. W. Th.* Professor Boardman.

7. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and estimates its cost. *Second semester, 2–4:30, M. T. Three credits.* Professor Boardman.

8. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water and the laws of its flow through openings and in channels of various kinds. *First semester, 8–9, T. W. Th.* Professor Boardman.

9. GRAPHIC STATICS. A study of the principles of graphic statics and their application in finding the stresses in framed structures. *First semester, 8–10, M. F.* Professor Boardman.

10. WATER SUPPLY. A study of public water supplies. Sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester, 8–9, T. W.* Professor Boardman.

11. IRRIGATION ENGINEERING. A thorough study of the questions involved in the collection, storage, and distribution of water for irrigation purposes. *Second semester, 8–9, Th. F.* Professor Boardman.

12. MINE SURVEYING. At the close of the college year the Junior Class in Surveying takes a four weeks' trip to Virginia City. Here one of the mines is surveyed and mine maps constructed. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. Professor Boardman.

XXXVI. DRAWING

PROFESSOR SCRUGHAM, ASSISTANT PROFESSOR LEWERS, MR. GOUGH.

1. FREEHAND DRAWING. Perspective sketches of machines. Sketches of projections of machines. *First semester. Section 1, 9–10, Section 2, 10–11, daily. Two credits.* Assistant Professor Lewers.

2. MECHANICAL DRAWING. Plates, lettering, machine parts, etc. *Second semester. Section 1, 9–10, Section 2, 10–11, daily. Two credits.* Assistant Professor Lewers.

3. ELEMENTARY MACHINE DESIGN. Drawing and design of machine parts, modern shop arrangement, etc. *First semester, 8–9, daily. Two credits. 9 Morrill Hall.* Mr. Gough.

3*a*. TOPOGRAPHICAL DRAWING AND MAPPING. *Second semester. One credit.* Professor Boardman.

4. DESCRIPTIVE GEOMETRY. *Second semester, 8–9, daily. Two credits. 9 Morrill Hall.* Mr. Gough.

5. MACHINE DESIGN. *First semester, 2–4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.

6. STEAM BOILER DESIGN. *Second semester, 2–4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.

7. ADVANCED MACHINE DESIGN. *Both semesters, 2–4:30,*

W. Th. F. Three credits. 1 Mechanical Building. Professor Scrugham.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT McCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.* Eight semesters, 11–12, M. T. Th. F. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.* Four semesters, 11–12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.* Four semesters, 11–12, W. One-half credit.* Lieutenant McClure.

*For exceptions, see Organization of Battalion of Cadets, page 43.

THE STATE NORMAL SCHOOL

THE STATE NORMAL SCHOOL

FACULTY

JOSEPH EDWARD STUBBS	President
ROMANZO ADAMS	Professor of Education
PETER FRANDSEN	Professor of Biology
KATHERINE LEWERS	Assistant Professor of Drawing
——— ———	Assistant Professor of Education
KATE CONGDON WOOD	Instructor in Vocal Music
——— ———	Instructor in English
ELIZA HENRIETTA OVERMAN	Assistant in Biology

FOUNDATION

The Legislature shall have power to establish normal schools, and such different grades of schools from the primary department to the university as in their discretion they may deem necessary. *State Constitution, Article XI, Section 5.*

In accordance with the Constitution of the State, the Legislature has made provision for a normal school as a coordinate department of the University.

In the State of Nevada the high school is an integral part of the public school system, which includes the primary, grammar, and high schools.

The State Normal School offers courses of instruction, both professional and liberal, for students who wish to become teachers in the public schools of Nevada.

The State Normal School is organized to provide for the professional training of teachers. As a coordinate department of the University of Nevada it is possessed of the advantages offered by the well-equipped laboratories and the library of the University.

AIMS

The purpose of the State Normal School in providing instruction in education is as follows:

To educate students for positions in the public schools.

To promote the study of educational science.

To teach the history of education and of educational systems and doctrines.

To secure to teaching the rights and advantages of a profession.

To give unity to our State educational system.

PRACTICE TEACHING

Opportunities for observation and practice teaching are afforded by the public schools of Reno. This work is carried on under the joint supervision of the Department of Education and of the Superintendent of the Reno Public Schools, and is required of all students as a prerequisite to graduation.

COURSES OF STUDY

Two courses of study are offered in the Normal School: (1) The Advanced Course, and (2) the Elementary Course.

The Advanced Course is identical with the Liberal Arts or the General Science Course in the College of Arts and Science, except that during the Junior and Senior years it includes Courses 4, 5, 6, 7, and 8 in Education, and Psychology 1. Students graduating from this course are entitled to a State teacher's certificate of high-school grade. For information see pages 68–75 of this Register.

ELEMENTARY COURSE

CONDITIONS OF ADMISSION

1. Entrance to the Normal School will be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. Candidates for admission who are not graduates of accredited schools must present themselves for examination in the common-school subjects, and in such high-school subjects as they may wish credit for.

3. Any school of the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

4. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

5. All students entering the Normal School must pass an examination in English composition, whether from an accredited school or not.

6. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

SUBJECTS AND CREDITS

1.	English (a, b, and c)	3 units*
2.	Mathematics (a, b, and c)	3 units
3.	Physics	1 unit
4.	History (a, b, and c)	2 units
5, 7, 8.	Latin, French, or German (a and b)	2 units
	Elective	1 unit

The five elective units may be selected from the subjects listed below:

5, 7, 8.	Latin, French, or German	1 unit
11.	Physical Geography	½ unit
12.	Botany	½ or 1 unit
13.	Zoology	1 unit
14.	Physiology	1 unit
15.	Bookkeeping	½ unit

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exception to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

GRADUATION

For graduation from the Nevada State Normal School an attendance of at least one year and the completion of the

*A unit, as the measure of the amount of high-school work done, is represented by one recitation a week throughout the year, each recitation being not less than forty minutes duration. Three units represent five recitations a week throughout three years; one-half unit, a half-year's work; two units, two years' work.

course of study is required. Credit is given for work done in other institutions of similar rank and character.

COURSE OF STUDY

FIRST YEAR	*1st Sem.*	*2d Sem.*
English	3	3
Music 1	1	1
Drawing	1	1
Education 11	2	–
Education 12	–	2
Education 15	5	–
Education 16	–	5
Zoology 1	4	–
Botany	–	4

SECOND YEAR	*1st Sem.*	*2d Sem.*
English	3	3
Music 2	1	1
Drawing	1	1
Education 13	2	–
Education 14	–	2
Education 17	2	2
Education 18	3	3
Hygiene 1	4	4

COURSES OF INSTRUCTION

VI.	English.	XV.	Zoology.
VII.	Music.	XVI.	Hygiene.
VIII.	Art.	XVII.	Botany.
XIII.	Education.		

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. ————.

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Hours to be arranged. Three credits. Stewart Hall.* Mr. ————.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters. Hours to be arranged. M. W. F. Stewart Hall.* Mr. ————.

VII. MUSIC

MRS. WOOD

1. NOTATION AND SIGHT SINGING. The elements of vocal music, one period each week being given to choral practice with the University Chorus. *Both semesters. Hours to be arranged.* Mrs. Wood.

2. METHODS OF TEACHING. The teaching of public-school music, together with a brief course of musical history. *Senior year. Both semesters, 2–3, T. Th. Morrill Hall.* Mrs. Wood.

VIII. ART

ASSISTANT PROFESSOR LEWERS

5*a*. TEACHERS' COURSE. Attention is given to the observation, the delineation, and color of forms in nature, to ornamental design, to the conventionalizing of plant forms, and to harmony of color. *Both semesters. Hours to be arranged. M. W. F. One credit. Physics Building.* Miss Lewers.

5*b*. TEACHERS' COURSE. A continuation of the first year's course, with more advanced work. *Both semesters. Hours to be arranged. M. W. F. One credit. Physics Building.* Miss Lewers.

XIII. EDUCATION

PROFESSOR ADAMS, ASSISTANT PROFESSOR ———.

11. EDUCATIONAL PSYCHOLOGY. Text, informal lectures, library, and quiz. The more elementary facts of psychology—the facts most obviously useful to the teacher are presented as concretely as possible. *First semester. Hours to be arranged. Two credits. 101 Stewart Hall.*

12. PRINCIPLES OF TEACHING. The aim of this course is to present the more important principles governing the various teaching processes from the point of view of their psychology and logic, as well as that of practical school-room use. *Second semester. Hours to be arranged. Two credits. 101 Stewart Hall.*

13. SCHOOL MANAGEMENT. Classification, gradation, promotion, course of study, program, health conditions, government, incentives, discipline, punishment, school law. *First semester. Hours to be arranged. Two credits. 101 Stewart Hall.*

14. HISTORY OF EDUCATION. Modern period with special reference to the development of present aims, the present course of study, and the methods now used in the better

schools. *Second semester. Hours to be arranged. Two credits. 101 Stewart Hall.*

Courses 15, 16, 17, and 18 are devoted to the consideration of several important common-school subjects. The aim in each course is two-fold: First, more accurate and broader scholarship and more skill in the school arts; and second, a clear understanding of the aims involved in the teaching of the subject and a knowledge of the method best designed to secure the desired results. The observation and practice teaching in the public schools which is correlated with the work of these courses enables the student to develop practical efficiency in teaching.

15. ARITHMETIC. *First semester. Hours to be arranged. Five credits. 101 Stewart Hall.*

16. GEOGRAPHY. *Second semester. Hours to be arranged. Five credits. 101 Stewart Hall.*

17. LANGUAGE. *Both semesters. Hours to be arranged. Two credits. 101 Stewart Hall.*

18. HISTORY. *Both semesters. Hours to be arranged. Three credits.*

XV. ZOOLOGY

PROFESSOR FRANDSEN, MISS OVERMAN

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. 101 Stewart Hall. Laboratory, 2–4:40, M. W. Four credits. 202 Hatch Hall.* Professor Frandsen and Miss Overman.

XVI. HYGIENE

PROFESSOR FRANDSEN, MISS OVERMAN

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, T. F. Four credits. 101 Stewart Hall.* Professor Frandsen and Miss Overman.

XVII. BOTANY

PROFESSOR FRANDSEN, MISS OVERMAN

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W. 101 Stewart Hall. Laboratory, 2–4:30, M. W. Four credits. 301 Hatch Hall.* Professor Frandsen and Miss Overman.

ROSTER OF STUDENTS

September, 1908—March, 1909

GRADUATES

Diplomas and Degrees were awarded on Commencement Day, June 10, 1908, as follows:

Master of Arts

Mrs. Katherine Mackay

Doctor of Laws

Azro Eugene Cheney
Edward Silsby Farrington
George Brinton McC. Harvey
Charles Adolph Ramm

Bachelor of Arts

Charles Albert Norcross
Alberta Amanda Cowgill
Anna Sophia Elam
June Mary Kane
Annie Estelle Prouty

Bachelor of Science

William Hinkle Massey
Eliza Henrietta Overman

Bachelor of Science in Mining Engineering

John Newman Davis
Lawrence John Frey
Louis Francis Kline
Frank James Ryan
Alfred Helam Westall

Bachelor of Science in Mechanical Engineering

Hugh James Gallagher
Edward Thomas George
Melvin Eli Mihills

Bachelor of Science in Civil Engineering

Arthur Verrill Doane
Fred James Freeman

Normal School Diploma

Advanced Course

Alberta Amanda Cowgill
Anna Sophia Elam
June Mary Kane
Annie Estelle Prouty

Elementary Course

Katherine Henrietta Bartels
Hazel May Dunlop
Christine Josephine English
Ethel Frances Folsom
Florence Margaret Fuss
Blanche Venus Gregory
Emma Nevada Higley
Emma Ethlyn Johnson
Mary Louise Little
Lila Lavinia Marks
Florence Jane McNeil
Mary Bell Stuart McVicar
Theresa Alberta Schweiss
Margaret Sarah Spears
Genevieve Wilson
Emilie Frances Yparraguirre
Annie Esther Sullivan

ROSTER OF STUDENTS

GRADUATES

Kennedy, Miles Bryce	Mines	London, England
Menardi, Harold Blair	Mines	Reno
Overman, Eliza Henrietta	General Science	Elko

SENIORS

Gignoux, Jules Raymond	Mines	Reno
Lake, Winfield Scott	Mechanical Engineering	Reno
Mack, Effie Mona	Liberal Arts	Reno
MacNair, Georgia Alice	Liberal Arts	Reno
Millar, Isabel	General Science	Gardnerville
O'Neill, Mary Gertrude	Liberal Arts	Reno
Owaku, Ihei	Liberal Arts	Chiba-Chiba-Ken, Japan
Palmer, Stanley Gustavus	Mechanical Engineering	Reno
Reed, Mabel Lacy	Liberal Arts	Edgemont
Roeder, Charles Daniel	Mines	Delamar
Ross, Silas Earl	Mines	Reno
Schuler, May Marcella	Liberal Arts	Reno
Singer, Dorothy Elizabeth	Liberal Arts	Goldfield
Snare, Reba Oliver	Liberal Arts	Reno
Williams, Homer Lloyd	Mines	Reno
Young, Blanche Nevada	Liberal Arts	Lovelock
Young, Robert Wilburn	Mines	San Francisco

JUNIORS

Alexander, Wallace DuBois	Agriculture	Tonopah
Bell, Forrest Francis	Mines	Winnemucca
Bennett, Clayton Alfred	Mines	Nevada City, Cal.
Bird, Donald M.	Mechanical Engineering	Reno
Brown, Mildred Inez	Liberal Arts	Reno
Colyer, Lydia	Liberal Arts	Reno
Conkey, Irene Maude	Liberal Arts	Reno
Curnow, George	Mechanical Engineering	Reno
Folsom, Ernest Gillman	Mechanical Engineering	Reno
Goldsworthy, Wm. Henry	Mines	Gold Hill
Heise, Henry Claud	Mines	Gardnerville
Homer, Dudley Dennison	Mines	Somersville, Mass.
Larcombe, Hazel Pearl	Liberal Arts	Reno
Leavitt, Louis Selwyn	Mechanical Engineering	Yerington
Mack, Margaret Elizabeth	General Science	Dayton
Mack, Ernest Deal	Mechanical Engineering	Reno
Mack, Irene Myrtle	Liberal Arts	Reno
McKenzie, Clyde Stuart	Mines	San Francisco
Miller, John Archibald	Civil Engineering	Gardnerville

Myers, Alfred	Mines	Berkeley, Cal.
Ohmert, Audrey Winifred	Liberal Arts	Reno
Rossi, Nicholas Louis	Civil Engineering	Johnsville, Cal.
Sears, John Ernest	Civil Engineering	Rawhide
Tillotson, Kenneth Edwin	Mines	Rockville, Conn.
Yamauchi, Shigiyasu	Liberal Arts	Nagasaki, Japan

SOPHOMORES

Bray, Florence Leslie	Liberal Arts	Reno
Cafferata, Fredrick James	Mechanical Engineering	Reno
Cashbaugh, James Anthony	Mines	Bishop, Cal.
Cleator, Cora Mildred	Liberal Arts	Reno
Fulton, Helen	Liberal Arts	Reno
Frisch, Edward Chester	Mines	Reno
Hanser, Hugo E.	Civil Engineering	New York City
Harris, Walter Cameron	Mines	Reno
Hart, Earl William	Mines	Goldfield
Hash, Vera Ellen	Liberal Arts	Reno
Henderson, Virgil	Mines	Chico, Cal.
Hobbins, Frank	Mines	Reno
Jepson, Melvin Edward	Mechanical Engineering	Verdi
Layman, Randall Brooks	Mechanical Engineering	Reno
Linton, William Donald Jr.	Mechanical Engineering	Reno
Mead, Agnes Claire	Liberal Arts	Reno
McVicar, Neil William	General Science	Smith
O'Brien, Alice Woodward	Liberal Arts	Sparks
Parker, Frances Dorothy	Liberal Arts	Ely
Payne, Harvey M.	Mines	Reno
Pike, Gertrude Beatrice	Liberal Arts	Reno
Sawin, Maude Amanda	Liberal Arts	Reno
Selby, Lisle James	Mechanical Engineering	Monterey, Cal.
Spark, Clinton Walter	Mines	Tonopah
Steffan, Jacob Frederick	Mechanical Engineering	Reno
Teel, Claude	Mines	Bishop, Cal.
White, Harriett Howell	Liberal Arts	Reno
Wilton, Stanley Mayhew	Liberal Arts	Goldfield

FRESHMEN

Anderson, Morris D.	Civil Engineering	Palo Alto, Cal.
Beebe, Cedric Harding	General Science	Reno
Brennen, Frank James	General Science	Elko
Bruce, Daniel Eldred	Mines	Reno
Chapman, Lloyd Gardiner	Mines	Wadsworth
Curler, Augusta Rhoda	General Science	Reno
Finney, Lynn Kelso	Mechanical Engineering	Modesto, Cal.
Finney, Wallace Rolland	Mechanical Engineering	Modesto, Cal.
Fletcher, Harold Augustus	General Science	Reno
Frisch, Emma Elizabeth	General Science	Reno
Griswold, George Gary	General Science	Denver, Col.

Hanson, Henry Scott	Mechanical Engineering	Reno
Harris, Arthur Ringland	General Science	Reno
Hauck, Fred Bryant	Mines	Chico, Cal.
Helphinstine, Charles W.	Mines	Chico, Cal.
Hobbins, Helen Ruthven	Liberal Arts	Reno
Holmes, August	Mines	Battle Creek, Mich.
Homer, Carl Newton	Mines	Somersville, Conn.
King, Lyman Stevenson	Mechanical Engineering	Oakland, Cal.
Langwith, Eleanor Miriam	Liberal Arts	Golconda
Langwith, Margaret	Liberal Arts	Golconda
Lenahan, Mabel	Liberal Arts	Reno
Netherton, Stanley Lucas	General Science	Yerington
Ogden, Chester Muir	Mech. Engineering	Nevada City, Cal.
Ohmert, Hazel Mary	Liberal Arts	Reno
Pearson, Edgar Ford	Mechanical Engineering	Reno
Quigley, John Vir	Mines	Reno
Redman, Joseph	Mechanical Engineering	Reno
Reed, Florence Nightingale	Liberal Arts	Tuscarora
Ross, Vera May	General Science	Reno
Seaton, Roland Moore	Mines	Santa Rosa, Cal.
Schuler, Isabella Cyrilla	General Science	Reno
Shonerd, Roscoe Edwin	Mechanical Engineering	Springdale
Smith, Clara Isabelle	General Science	Reno
Smither, Thomas McCourt	General Science	Reno
Spencer, Raymond	Mechanical Engineering	Concord, Cal.
Thompson, Ethel Ray	Liberal Arts	Reno
Tibbals, Carl Lampe	Civil Engineering	Reno
Warren, Erma Belle	Liberal Arts	Reno
Williams, Maud Rathrock	Liberal Arts	Reno
Williams, Cecil Lewis	Mines	Reno
Willson, Irvin H.	Mines	Hollister, Cal.
Winter, Bessie Marguerite	Liberal Arts	Whiterock
Wright, Farnsworth	General Science	Reno

THE NORMAL SCHOOL

Bates, Edna Viola.....Verdi
Brown, Irene Veronica....Silver City
Brown, Vevia Florence.....Schurz
Conway, Maude Elva Sweetwater
Cliff, Bertha E.....Franktown
Davey, Lillian A...Grass Valley, Cal.
Dake, Frances Irene.....Carson City
Erixon, Astrid Cecilia..Anoka, Minn.
Flannery, Clara A.....Virginia City
Harrison, Mabel E. Carson City
Hancock, Edna Belle Gold Hill
Hellwinkel, J. Anna.....Gardnerville
Henningsen, Emma C. ..Gardnerville
Hanley, Helena M. Virginia City
Hills, Elizabeth F.....Virginia City
Jensen, Maren K. Gardnerville
Kaiser, Gussie.....Virginia City
Kelly, Josephine M. Virginia City
McKenzie, Louise Clio, Cal.
Mitchell, Anna M. Virginia City
Monahan, M. Elsie Virginia City
Nesbitt, Mattie Belle.....Goldfield
O'Hara, Katherine F...Virginia City
Pion, Anna Pauline....Virginia City
Porter, May Grace.....Verdi
Powers, Ruth Silver City
Ramsey, Mary Agnes.....Reno
Taylor, Hazel Belle.....Silver City
Tinney, Margaret H.....Silver City
Vaillencour, Alma B.....Yerington
Young, Margaret A.....Virginia City

SPECIAL STUDENTS

Arentz, Paul Raymond.....Mines Oak Park, Ill.
Anderson, Walter Williams.....Mines Reno
Berry, Agnes H. ..f.....Liberal Arts Sierraville, Cal.
Badger, Charles Kilgore.....Civil Engineering Bakersfield, Cal.
Barber, Elda Marion Liberal Arts Reno
Bennett, Ellsworth R. Mines.....Nevada City, Cal.
Bonestell, Mrs. Maud C.....Liberal Arts Reno
Brambila, Guadalupie Domestic Science Reno
Chase, Mrs. Florence Zoe Liberal Arts Reno
Clingman, Earl Newton.....Mechanical Engineering Chicago
Cochran, Harry Emerson Civil Engineering Winnemucca
Clegg, Nita.....Liberal Arts Reno
Corcoran, J. Paul.....Mines.....New Albany, Pa.
Crane, William Patrick.....Mines Elko
Davis, Mrs. Lee J.....Liberal Arts Reno
Dignowity, Ralph Purkiss.....Liberal Arts Reno
Dignowity, Fred A. Mines Reno
De Lonchant, Philip.....Mechanical Engineering Reno
Doherty, William Francis.....Mechanical Engineering Reno
Dolan, Lawrence John.....Civil Engineering.....Los Angeles, Cal.
Drescher, Otto Carl Mechanical Engineering....Milwaukee, Wis.
Foley, Laura C.....Domestic Science Reno
Gamman, Mrs. Alice E.....General Science Reno
Glass, Rowena Ethel Liberal Arts Reno
Hardy, Royce Aller Mines Los Angeles, Cal.
Hopkins, Ralph Thomas Mines.....Bangor, Me.
Horn, John Stephen.....General Science Reno
Johansen, Carl Civil Engineering.....Arroyo Grande, Cal.

Jones, Helen	Liberal Arts	Reno
Kemp, Lorin W.	Mines	San Francisco
Kilborn, Mrs. G. D.	Domestic Science	Reno
Kortlander, Ivey Elizabeth	Liberal Arts	Reno
Larcombe, Mabel	Liberal Arts	Reno
Lightcap, Mrs. Louise	Liberal Arts	Reno
Long, Leon Root	Mines	Amboy, Ill.
Lonkey, Lloyd Christian	Mechanical Engineering	Verdi
McDonald, Fred A.	Mines	Reno
Menardi, Meda	General Science	Reno
Morrison, William Plummer	Civil Engineering	Franktown
Pfeiffer, Emil Charles	Liberal Arts	Reno
Pfeiffer, Mrs. E. C.	Liberal Arts	Reno
Preston, Mrs. A. W.	Liberal Arts	Sparks
Robb, Raymond Frank	Liberal Arts	Tonopah
Robinson, Mrs. Henry D.	Domestic Science	Reno
Schiefelbein, Charles J.	General Science	Floriston, Cal.
Schraps, Paul C.	Mines	Galilee, N. J.
Scofield, Herbert C.	General Science	Reno
Schadler, Mrs. F. M.	Domestic Science	Reno
Tom, Charles Franklin	Mines	Pecos City, Tex.
Tuttle, Charles Ira Jr.	Mines	Salt Lake City
Van Nostrand, John James	General Science	Chicago
Wardin, Mrs. Elmer E.	Domestic Science	Reno
Wander, Mrs. Eileen D.	Liberal Arts	Reno
Webster, Ethel	Liberal Arts	Reno
Wood, Marjorie	General Science	Reno

SUMMARY OF ENROLLMENT

SUMMARY

School of Liberal Arts—		
Seniors	9	
Juniors	7	
Sophomores	11	
Freshmen	10	
Specials	18	
		55
School of Mines—		
Seniors	5	
Juniors	8	
Sophomores	9	
Freshmen	10	
Post-graduates	2	
Specials	14	
		48
School of General Science—		
Seniors	1	
Juniors	1	
Sophomores	1	
Freshmen	13	
Post-graduate	1	
Specials	7	
		24
School of Mechanical Engineering—		
Seniors	2	
Juniors	5	
Sophomores	6	
Freshmen	8	
Specials	5	
		26
School of Civil Engineering—		
Seniors	0	
Juniors	3	
Sophomores	1	
Freshmen	1	
Specials	5	
		10
School of Agriculture—		
Seniors	0	
Juniors	1	
Sophomores	0	
Freshmen	0	
		1
Normal School		31
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Total University Schools		201
Enrollment of men		106
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GENERAL INDEX

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UNIVERSITY OF NEVADA BULLETIN

VOL. IV APRIL 1, 1910 No. 2

UNIVERSITY OF NEVADA REGISTER



TWENTY-SECOND ANNUAL NUMBER

BLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA
RENO, NEVADA

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UNION
LABEL

OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, April 1, 1910.

To His Excellency, DENVER S. DICKERSON, *Acting Governor of the State of Nevada.*

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1909–1910, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: JOHN SUNDERLAND,
Chairman.

GEORGE H. TAYLOR, *Secretary.*

UNIVERSITY CALENDAR

1910

May 25 ... Wednesday ... University Commencement
May 26–June 22 ... Thursday-Wednesday ... Summer School in Mine Surveying
June 23–July 20 ... Thursday-Wednesday ... Summer School in Geology

First Semester, 1910–1911

August 15–16 ... Monday-Tuesday ... Examinations for admission
August 15–16 ... Monday-Tuesday ... Reexaminations to remove conditions
August 16–17 ... Tuesday-Wednesday ... Matriculation and registration
August 18 ... Thursday ... Recitations and lectures begin
August 21 ... Sunday ... University Convocation at 3 p. m. in the Gymnasium
October 31 ... Monday ... Admission Day
November 24 ... Thursday ... Thanksgiving
December 21 ... Wednesday ... First semester ends
December 22 ... Thursday ... Holiday vacation begins

1911

January 8 ... Sunday ... Holiday vacation ends

Second Semester, 1910–1911

January 9–10 ... Monday-Tuesday ... Examinations for admission
January 9–10 ... Monday-Tuesday ... Reexaminations to remove conditions
January 10–11 ... Tuesday-Wednesday ... Matriculation and registration
January 12 ... Thursday ... Recitations and lectures begin
January 15 ... Sunday ... University Convocation at 3 p. m. in the Gymnasium
February 12 ... Sunday ... Lincoln's Birthday
February 22 ... Wednesday ... Washington's Birthday
April 14–16 ... Friday-Sunday ... Easter recess
May 6 ... Saturday ... Senior examinations end
May 12 ... Friday ... High School Commencement
May 13 ... Saturday ... Examinations end
May 13 ... Saturday ... Annual meeting of the Honorary Board of Visitors
May 14 ... Sunday ... Baccalaureate Sunday
May 15 ... Monday ... Thesis Day
May 16 ... Tuesday ... Annual meeting of the Board of Regents
May 16 ... Tuesday ... Class Day
May 17 ... Wednesday ... University Commencement

OFFICERS OF ADMINISTRATION

THE REGENTS OF THE UNIVERSITY

The Hon. JOHN SUNDERLAND (1907–1911) Chairman Reno
The Hon. CHARLES B. HENDERSON (1907–1911) Elko
The Hon. A. A. CODD (1909–1913) Goldfield
The Hon. JOHN J. SULLIVAN (1909–1911) Virginia City
The Hon. FRANK WILLIAMS (1909–1913) Good Springs
Mr. GEORGE H. TAYLOR, Secretary Reno

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Vice-President ROBERT LEWERS
Superintendent of Buildings and Grounds RICHARD BROWN
Assistant Registrar LOUISE M. SISSA
Librarian JOSEPH DIEFFENBACH LAYMAN
Office Secretary CAROLYN M. BECKWITH

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ROBERT LEWERS — WILLIAM S. TANGIER SMITH
JAMES EDWARD CHURCH, JR. — HERBERT WYNFORD HILL
PETER FRANDSEN[1] — GORDON HAINES TRUE

GEORGE J. YOUNG[1]

[1]Absent in Europe on leave.

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

ADMINISTRATIVE COMMITTEES

Student Affairs for Men.....LEWERS, BROWN, TRUE, MCCLURE, CARPENTER
Student Affairs for Women..Miss BARDENWERPER, Miss MEIGHAN, Mrs. KAYE
Athletics.....KENNEDY, SCRUGHAM, MCCLURE
Public Exercises DOTEN, BOARDMAN, LAYMAN, Miss LEWERS, Mrs. WOOD
Literary Contests.....Miss WIER, HASEMAN, PAINE
Public Health.....MACK, Mrs. KAYE, JOHNSTONE
Delinquent Scholarship.....YOUNG[1], FRANDSEN[1], M. ADAMS, MARTIN, ORDAHL
Military Affairs MCCLURE, KNIGHT, JONES

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Admission and Advanced Standing.....HILL, SMITH, HARTMAN
Registration.....FRANDSEN[1], YOUNG[1], M. ADAMS, MARTIN, ORDAHL
Graduation and Thesis.....SCRUGHAM, ORDAHL, THOMPSON
Schedule and Examinations BOARDMAN, HOWE, THOMPSON
University Publications CHURCH, HILL, JACOBSON
Library LAYMAN, CHURCH, Miss WIER, JACOBSON, ORDAHL
Graduate Courses R. ADAMS, CHURCH, HARTMAN
Tutorial Committee.....MARTIN, BOARDMAN, HASEMAN, JONES, GOUGH, CHATFIELD, PAINE, KNIGHT, CARPENTER, ROSS

[1]Absent in Europe on leave.

The President is "ex officio" member of all Standing Committees.

UNIVERSITY FACULTY

OFFICERS OF INSTRUCTION AND ADMINISTRATION

With the exception of the President, the names of all professors and officers in the first group whose appointments antedate April, 1907, are arranged in order of appointment to rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, assistants, and officers are arranged in their respective groups according to order of appointment to present rank.

JOSEPH EDWARD STUBBS

President of the University, Professor of Elementary and International Law

Instructor in Greek and Latin, Ohio Wesleyan University, 1872–75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880–86; President Baldwin University, Ohio, 1886–94; Honorary D.D., German Wallace College, 1890; President Ohio College Association, 1891–92; President of the University of Nevada, 1894–; Professor of Psychology and Ethics, 1894–95; Professor of Political Science and Ethics, 1895–1904; Professor of Elementary and International Law and Greek, 1904–; President Association of American Agricultural Colleges and Experiment Stations, 1899–1900; LL.D., Ohio Wesleyan University, 1905.

ROBERT LEWERS

Vice-President, Professor of Political Economy, and Teacher of Commercial Subjects

Teacher, Public School, Mill Station, Nevada, 1882–83; Sutro, Nevada, 1884–85; Dayton, Nevada, 1886–89; Registrar, 1890–1906; Professor of Political Economy and Principal of the Commercial School, University of Nevada, 1890–.

RICHARD BROWN

Superintendent of Buildings and Grounds and Master of Lincoln Hall

Cutter in United States Mint, Carson City, 1889–1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891–1899; Superintendent of Buildings and Grounds, University of Nevada, 1891–; Superintendent of University Dining Hall, University of Nevada, 1895–; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–.

THOMAS W. COWGILL

Emeritus Professor of the English Language and Literature

A.B., Harvard University, 1883; Professor of English, Mt. Union College, Ohio, 1884–85; Professor of Greek and English, Kansas Wesleyan University, 1886–1890; Fellow in English, Vanderbilt University, 1887–88; A.M., Vanderbilt University, 1888; Teacher of Greek and Latin, St. John's School, Salina,

Kansas, 1890–91; Professor of History, Rhetoric, and English Literature, University of Nevada, 1891–97; Professor of the English Language and Literature, 1897–99; Professor Emeritus, 1899–.

HENRY THURTELL

Professor of Mathematics and Mechanics

B.S., Michigan Agricultural College, 1888; Instructor in Mathematics, Michigan Agricultural College, 1888–1890; Graduate Student in Mathematics, University of Michigan, winters of 1888–1891; Assistant Professor of Mathematics, Michigan Agricultural College, 1890–91; Professor of Mechanics and Mechanical Drawing, University of Nevada, 1891–97; Graduate Student in Mathematics, University of Chicago, summer quarter, 1895; Professor of Mathematics and Mechanics, University of Nevada, 1897–; Dean of the Faculty, 1900–05; State Engineer of Nevada, 1905–07; Member State Railroad Commission, 1907–.

JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896– (absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

LAURA DE LAGUNA

Professor of Modern Languages

Instructor in English, Mills Seminary, California, 1888–89; Instructor in French and English, Oakland Seminary, California, 1890–91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894–95; Student Romance Languages, Rome, Paris, 1895–96; Instructor in Modern Languages, University of Nevada, 1896–99; Assistant Professor of Modern Languages, 1899–1901; Associate Professor of Modern Languages, 1901–1906; Professor of Modern Languages, 1907–.

JEANNE ELIZABETH WIER

Professor of History

Teacher, Public Schools, Rockwell, Iowa, 1889–1892; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893–95; Student, Leland Stanford Junior University, 1896; Acting Assistant Professor of History, University of Nevada, 1899–1901; B.A. (History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901–06; Secretary Nevada Historical Society, 1904–; Professor of History, 1907–.

PETER FRANDSEN

Professor of Biology

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895–96; A.B., Harvard University, 1898; A.M., 1899; Tutor and

Assistant in Zoology, Harvard University, 1898–99; Graduate Student, Harvard University, 1899–1900; Assistant in Zoology, Harvard University and Radcliffe College, 1899–1900; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900–02; Associate Professor of Zoology and Bacteriology, 1902–03; Professor of Zoology and Bacteriology, 1903–06; Professor of Biology, 1906–.

PATRICK BEVERIDGE KENNEDY

Professor of Botany, Horticulture, and Forestry

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900–; Associate Professor of Botany and Horticulture, University of Nevada, 1900–02; Professor of Botany, Horticulture, and Forestry, 1902–.

GEORGE J. YOUNG

Professor of Mining and Metallurgy

B.S., College of Mining, University of California, 1899; Analytical Assistant, Mining Department, University of California, 1899–1900; Student of Economic Deposits, and Mining and Metallurgical Practice in the Field during summer months, 1900, Bodie District, California; 1901, in Utah, Colorado, California; 1902, in Utah and Montana; 1903–04, in Nevada and California; Assistant Professor of Metallurgy, University of Nevada, 1900–02; in charge of Nevada State Mining Laboratory, 1900–; Member of American Institute of Mining Engineers, 1900–; Professor of Mining and Metallurgy, University of Nevada, 1902–.

SAMUEL BRADFORD DOTEN

Professor of Entomology

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898–1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900–05; Instructor in Mathematics and Entomology, 1900–02; Assistant Professor of Mathematics and Entomology, 1902–03; Assistant Professor of Entomology, Meteorology, and Mathematics, 1903–05; Principal of the University High School and Teacher of Mathematics, Consulting Entomologist, and Meteorologist, Nevada Agricultural Experiment Station, 1905–06; Entomologist, Experiment Station, and Professor of Entomology, 1906–.

ROMANZO ADAMS

Professor of Education and Sociology

Teacher, Public School, Bloomingdale, Wisconsin, 1886–87; Marshalltown, Iowa, 1887–88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892–94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology and Principal of the Normal Department, Western College, Iowa, 1898–1900; Graduate Student, University of Chicago,

1900–02; Fellow in Sociology, University of Chicago, 1901–02; Ph.D. (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905–; Director, N. E. A., 1908; Professor of Education and Sociology, University of Nevada, 1902–.

GORDON HAINES TRUE

Professor of Agriculture and Animal Husbandry

B.S., University of Wisconsin, 1894; Instructor in Dairy Husbandry, Michigan Agricultural College, 1894–99; Professor of Animal Husbandry, University of Arizona, 1899–1903; Chairman Executive Committee, Arizona Agricultural Association, 1901–03; Professor of Agriculture and Animal Husbandry, University of Nevada, 1903–.

JAMES GRAVES SCRUGHAM

Professor of Mechanical Engineering

B.M.E., Kentucky State College, 1900; with Creaghead Engineering Company, Cincinnati, Ohio, 1900; Instructor in Physics and Drawing, High School, Fort Smith, Arkansas, 1901; Graduate Student, University of Michigan, summer, 1901; Director of Manual Training, High School, Highland Park, Chicago, 1901–03; with Metropolitan Elevated Railway, Chicago, 1902; Instructor in Mechanical Engineering, Kentucky State College, Summer School, 1903; Assistant Professor of Mechanical Engineering, University of Nevada, 1903–05; Member of International Electrical Congress, 1904; with Abner Doble Company, San Francisco, summer, 1905–06; Associate Professor of Mechanical Engineering, University of Nevada, 1905–06; M.E., Kentucky State University, 1906; Instructor in Mechanical Engineering, Summer School, University of Wisconsin, 1907; Inspector of Tests, Oregon Short Line Railroad, summer, 1908–09; Professor of Mechanical Engineering, University of Nevada, 1906–.

WILLIAM SIDNEY TANGIER SMITH

Professor of Geology and Mineralogy

B.L., University of California, 1890; Graduate Student, Johns Hopkins University, 1890–91, Ph.D., University of California, 1896; Professor of Mathematics and Natural Science, Occidental College, Los Angeles, 1894–95; Fellow in Mineralogy, University of California, 1895–97; Professor of Mathematics, State Normal School, Chico, California, 1897–98; Assistant in Chemistry, University of California, 1898; Assistant in Mineralogy, University of California, 1899–1900; Assistant Geologist, U. S. Geological Survey, 1900–07: Associate Professor of Geology and Mineralogy, University of Nevada, 1906–; Fellow, Geological Society of America; Fellow, American Association for the Advancement of Science; Professor of Geology and Mineralogy, University of Nevada, 1907–.

MAXWELL ADAMS

Professor of Chemistry

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890–91; A.B. (Chemistry), Stanford University, 1895; A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in Chemistry, Leland Stanford Junior University, 1895–97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of

Chemistry and Physics, State Normal School, Chico, California, 1897–1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900–01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900–06; Consulting Chemist to Diamond Match Company, 1901–06; Fellow, American Association for the Advancement of Science; Professor of Chemistry, University of Nevada, 1906–.

HAYWARD H. HOWE

Professor, and Principal of the High School

Graduate of the Mount Pleasant (Iowa) High School and Normal Institute; Principal of the Auburn (California) High School, 1863–65; Principal of the Sacramento Grammar School, 1865–69; Principal, Gold Hill (Nevada) High School, 1869–1871; Principal of the Sacramento High School, 1871–72; Principal, Carson City High School, 1872–1906; Professor, and Principal of the High School, University of Nevada, 1906–.

WINFRED BERDELL MACK

Professor of Bacteriology and Veterinary Science

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904–1905; Assistant in Pathology and Bacteriology, Cornell University, 1905–06; Veterinarian and Bacteriologist, Nevada Agricultural Experiment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1907–; Director of State Hygienic Laboratory, 1909–.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–03; Graduate Student and Reader, University of Chicago, June, 1903–June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904–September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905–September, 1905; Fellow in English, University of Chicago, June, 1906–September, 1907; Professor of the English Language and Literature, University of Nevada, 1907–.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888–August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891–January, 1892; Instrumentman, Memphis Artesian Water Company, January–September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; with Engineering Department Sanitary District of Chicago, June, 1894; on Topographic Surveys and in charge of Cement Testing Laboratory, June, 1894–December, 1896; miscellaneous engineering work, Chicago,

January–August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897–August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901–March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January–August, 1905; Superintendent, Fitzsimmons & Connell Company (bridge substructure), August–December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer in charge branch canal projects, Sanitary District of Chicago, January–August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.

ERNEST WHITNEY MARTIN

Acting Professor of Latin and Greek

A.B., University of Chicago, 1900; A.M., Leland Stanford Junior University, 1902; Special Student in Latin, Buchtel College, 1891–95; Instructor in Latin and Greek, Clarinda Academy, Clarinda, Iowa, 1895–96; Principal of High School and Teacher of Classics, Clarinda, Iowa, 1896–98; U. S. A., Company M, I. V. I., serving in Philippine Islands, 1898–99; Student, University of Chicago, summer, 1896; summer, 1897; fall, winter, 1899–1900; Graduate Student, University of Chicago, spring, 1900; summer, 1904; Graduate Student, University of Berlin and American School of Classical Archæology, Rome, 1900–01; Fellow in Latin, Leland Stanford Junior University, 1901–02; Instructor and Graduate Student in Latin and Greek, 1902–05; Assistant Professor of Latin, 1905–; Acting Professor of Latin and Greek, University of Nevada, 1908–.

LOWE ABEEL McCLURE

Professor of Military Science and Tactics; Director Physical Training for Men

Graduate, United States Military Academy, 1904; commissioned Second Lieutenant of Infantry, June 15, 1904; served with the 15th Infantry for two years in the Island of Mindanao, P. I., and three years with the same regiment in the United States; Professor of Military Science and Tactics, University of Nevada, 1909–.

LEON WILSON HARTMAN

Professor of Physics

B.S., Cornell University, 1898; A.M., 1899; Graduate Scholar in Physics, 1899; Assistant in Physics, 1900–01; Professor of Physics, Kansas Agricultural College, 1901–02; Frazer Fellow in Physics, University of Pennsylvania, 1902–03; Ph.D., 1903; Tyndale Fellow in Physics of the University of Pennsylvania, Göttingen, 1903–04; Instructor in Physics, Cornell University, 1904–05; Assistant Professor of Physics, University of Utah, 1905–06; Associate Professor of Physics, 1906–09; Professor of Physics, 1909; Fellow A. A. A. S.. Am. Phys. Soc., Utah Academy of Science; Professor of Physics, University of Nevada, 1909–.

CARL ALFRED JACOBSON

Professor of Agricultural Chemistry

Teacher, Public Schools of Wisconsin, 1894–96; Carleton Academy, 1896–98; B.S., Carleton College, Northfield, Minnesota, 1903; Graduate Student, Johns

Hopkins University, Baltimore, Maryland, 1903–04; Europe, 1901–02; Instructor in Chemistry, York City High School, York, Pennsylvania, 1904–07; M.S. (*in absentia*), Carleton College, 1907; Ph.D., Johns Hopkins University, 1908 (Chemistry, Physical Chemistry and Physics); Fellow and Research Chemist, Rockefeller Institute for Medical Research, New York, 1908–09; Professor of Agricultural Chemistry, University of Nevada, and Chief Chemist, Nevada Agricultural Experiment Station, 1909–.

DWIGHT BRUNEL HUNTLEY

Acting Professor in Mining and Metallurgy

Ph.B., University of California, 1875; University of California, Graduate Student in Mining and Metallurgy, 1878; U. S. Geological Survey work, 1881–82; Mill Superintendent, Grand Central Mining Company, Tombstone, Arizona, 1883–86; Mine Superintendent, Carlisle Mining Company, New Mexico, 1886–87; Mine Superintendent, United States of Colombia, South America, 1888; Mine Manager, Iron Silver Mining Company, Leadville, Colorado, 1891; Manager, Morning Mining Company, Cœur d'Alene, Idaho, 1892–95; Manager, Tom Boy Mining Company, Telluride, Colorado, 1895–96; Manager, Delamar Mining Company Limited, Idaho, 1896–1901; Consulting Engineer, Matabele Reefs and Estates Company Limited, Rhodesia, South Africa, 1902–04; Acting Professor of Mining and Metallurgy, University of Nevada, 1909–.

ALBERT W. C. T. HERRE

Acting Professor of Biology

A.B., Stanford University, December, 1903; A.M., Stanford University, 1905; Imperial Museum, Vienna, Austria, 1907; Ph.D., Stanford University, 1909; Assistant Superintendent of Schools, Springfield, Illinois, 1890–1900; Assistant, U. S. Bureau of Fisheries, and Zoological Museum, Stanford University, 1903–04; Instructor in Biology, High School, San José, California, 1904; Acting Professor of Biology, University of Nevada, 1909–.

CHARLES HASEMAN

Associate Professor of Mathematics

A.B., Mathematics, Indiana University, 1903; Instructor of Mathematics, and Physics, High School, Elwood, Indiana, 1903–05; A.M., Mathematics, Indiana University, 1906; Assistant in Mathematics, Indiana University, 1905–06; Ph.D., Mathematics, University of Göttingen, 1907; Instructor in Mathematics, Indiana University, 1907–08; Assistant Professor of Mathematics, Indiana University, 1908–09; Associate Professor of Mathematics, University of Nevada, 1909–.

OSCAR P. JOHNSTONE

Associate Professor of Physiology and Hygiene, and Assistant in the State Hygienic Laboratory

Ph.B., College at Grinnell, Iowa, 1897; M.S., University of Iowa, 1902; M.D., Rush Medical College, 1905; Fellow in Chemistry, University of Iowa, 1900–01; Assistant in Physiology, Cornell University, 1901–03; Assistant in Physiology, Cornell University Summer School, 1903; Assistant in Pathology, Rush Medical College, 1903–04; Fellow in Pathology, Rush

Medical College, 1904–06; Professor of Pathology, University of Colorado, 1905–07; Substitute in Pathology, Rush Medical College, for Professor Ricketts, summer of 1907; for Professor LeCount, spring of 1908; Pathologist, Mercy Hospital, Pittsburg, Pennsylvania, 1908–09; Associate Professor of Physiology and Hygiene, University of Nevada, 1909–.

KATE BARDENWERPER

Assistant Professor of Domestic Science

Graduate, State Normal School, San José, California, 1880; Teacher, Public Schools, Carson City, Nevada, 1880–86; First Assistant, High School, Carson City, 1886–94; Critic Teacher in Training School, University of Nevada, 1894–99; Student, Leland Stanford Junior University, 1898–99; Student, University of California, 1900–01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S. (Domestic Science), 1901; Instructor in Domestic Science, University of Nevada, 1904–05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Domestic Science, University of Nevada, 1905–.

SANFORD CROSBY DINSMORE

Assistant Professor of Agricultural Chemistry, and in Charge Food and Drug Control

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903–05; Chemist, Nevada Agricultural Experiment Station, 1905–; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906–.

KATHERINE LEWERS

Assistant Professor of Freehand Drawing

Student, St. George's Art School, Glasgow, 1893–94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894–97; Student with Howard Helmick, Washington, D. C., 1897–99; received prize scholarship New York School of Design, 1900; Graduate of New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905–; Photographer, Nevada Agricultural Experiment Station, 1905–; Assistant Professor of Freehand Drawing, 1907–.

GEORGE ORDAHL

Assistant Professor of Psychology and Education

Principal, Public Schools, Merrillville, Indiana, 1900–01; Corvallis, Montana, 1901–03; A.B., University of Oregon, 1905; A.M., 1906; Fellow, Clark University, Worcester, Massachusetts, 1906–08; Ph.D., Clark University, 1908; Professor of Psychology and Education, Geneva College, Beaver Falls, Pennsylvania, 1908; Assistant Professor of Psychology and Education, University of Nevada, 1909–.

JAY ARNOLD CARPENTER

Assistant Professor of Mining and Metallurgy

B.S., Mining Engineering, University of Nevada, 1907; with the Nevada Douglas Copper Company, Yerington, Nevada, and the Tonopah Belmont Development Company, Tonopah, Nevada, 1907–08; Instructor in Mining

and Metallurgy, University of Nevada, 1908–10; Assistant Professor of Mining and Metallurgy, University of Nevada, 1910–.

J. CLAUDE JONES

Assistant Professor of Geology and Mineralogy; Curator of the Museum

A.B., University of Illinois, 1902; Instructor of Physics and Manual Training, Champaign High School, 1902–03; Instructor of Manual Training, Whiting High School, 1903–04; Assistant in Geology, University of Illinois, 1904–05; Instructor in Geology, University of Illinois, 1905–06; Graduate Student, University of Chicago, 1906–09; Research Assistant in Geology, University of Chicago, 1907–09; Instructor in Physiography, University of Kansas, summer term, 1907; Instructor in Physiography, University of Chicago, summer term, 1908; Member of the State Geological Survey of Illinois, 1906–09; Instructor in Geology and Mineralogy, University of Nevada, 1909–10; Curator of the Museum, University of Nevada, 1909–; Assistant Professor of Geology and Mineralogy, University of Nevada, 1910–.

CHARLES S. KNIGHT

Assistant Professor of Agronomy

B.S., Agriculture, University of Wisconsin, 1907; Assistant in Feed and Fertilizer Inspection, University of Wisconsin, July, 1907–January, 1908; Assistant in Agronomy, Kansas State Agricultural College, January, 1908–1909; Instructor in Agronomy, University of Nevada, 1909–10; Assistant Professor of Agronomy, University of Nevada, 1910–.

ALICE EUNICE ARMSTRONG

Assistant Librarian

Assistant Librarian, Fresno Free Public Library, June, 1896; Librarian, October, 1899–June, 1905; Acting Librarian, University of Nevada, 1905–07; Assistant Librarian, 1907–.

ACHILLES CALLOWAY GOUGH

Instructor in Mechanical Engineering

B.M.E., Kentucky State College, 1906; with H. F. Gough & Sons, Machine and Carriage Builders, Benton, Kentucky, 1893–1900 and 1902–04; with Fairbanks-Morse Company, Beloit, Wisconsin, summer, 1906–07; Instructor, Mechanical Engineering, Iowa State College, 1906–07; Instructor in Mechanical Engineering, University of Nevada, 1907–.

MRS. KATE CONGDON WOOD

Instructor in Vocal Music

Student, Northwestern Conservatory, Minnesota, 1891–92; studied voice with A. W. Porter at Minneapolis, 1892–95; solo work and private teaching, 1895–1904; Graduate, National School of Public School Music Methods, 1904; Supervisor of Music in High School and Grammar Schools of Elko, Nevada, 1904–06; Instructor in Vocal Music, University of Nevada, 1907–.

REUBEN CYRIL THOMPSON

Instructor in Latin

B.A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., Harvard, 1902; Instructor in Latin and History, High School, Boise City,

Idaho, 1902–05; Professor in Latin, State Normal School, Albion, Idaho, 1905–08; Instructor in History and Civics, Idaho State Summer Normals, 1907–08; Instructor in Latin and Greek, University of Nevada, 1908–.

AMOS ARTHUR HELLER

Instructor in Botany, Horticulture and Forestry

A.B., Franklin and Marshall College, 1892; A.M., 1897; Field Agent, U. S. Department of Agriculture, 1892; botanical explorations in Virginia, North Carolina, Texas, Hawaiian Islands, Idaho, 1893–96; Instructor in Botany, University of Minnesota, 1896–98; Chief of Vanderbilt Expedition of New York Botanical Garden to Porto Rico, 1898–99; in publishing business, Lancaster, Pennsylvania, 1900–01; botanical explorations in California, 1902–07; author of Catalogue of North American Plants, 3 editions; editor of Mühlenbergia, 1900–; author of 100 botanical papers; member of the Torrey Botanical Club of New York City, and of the Linnaeen Society of Lancaster, Pennsylvania; Instructor in Botany, Horticulture, and Forestry, University of Nevada, 1908–.

GUSTAVUS SWIFT PAINE

Instructor in English

Ph.B., University of Chicago, August, 1908; Ph.M., University of Chicago, June, 1909; Instructor in English, University of Nevada, 1909–.

HELEN ANN MEIGHAN

Director Physical Training for Women

Graduate of High School, Mankato, Minnesota, 1893; Special Student, State Normal School, Mankato, Minnesota, 1894–97; Teacher in Public Schools with special work in Calisthenics, Duluth, Minnesota, 1898–1903; Principal of School and special work in Calisthenics, Missoula, Montana, 1903–05; special work in Physical Training under Max Aletzhaeuser of Leipzig, Germany; private pupil of Miss Anna Buttner, of Dr. Sargent's School, Harvard University; specialized in Physical Training, University of Minnesota; Special Teacher in Physical Training, Public Schools, Goldfield, Nevada, 1907–09; Director of Physical Training for Women, University of Nevada, 1909–.

NORMAN CHATFIELD

Instructor in Mechanical Engineering

Engineer with Market Street Railway Company, 1901–02; Engineer with Contra Costa Water Company, 1902–04; Instructor Mechanical Engineering, University of Nevada, 1909–.

ELIZA HENRIETTA OVERMAN

Assistant in Biology

B.S., General Science, University of Nevada, 1908; Graduate Student, 1908–09; Assistant in Biology, 1908–.

SILAS EARL ROSS

Assistant in Chemistry

B.S., Mining Engineering, University of Nevada, 1909; Assistant in Chemistry, University of Nevada, 1909–.

RALPH LYON HARTLEY
Assistant in Physics

A.B., University of Utah, 1909; Student Assistant in Physics, University of Utah, 1906–08; Student Instructor in Mathematics, University of Utah, 1908–09; Instructor in Physics, University of Nevada, 1909–.

DOROTHY ELIZABETH SINGER
Student Assistant in Latin

B.A., Liberal Arts, University of Nevada, 1909; Graduate Student, 1909–10; Student Assistant in Latin, 1909–.

MILES BRYCE KENNEDY
Assistant in Chemistry and in Food and Drug Control

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1907–08; Assistant in Chemistry, 1908–.

LOUISE MARY SISSA
Assistant Registrar

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884–1892; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893–1901; House Mother, Rowland Hall, Salt Lake City, 1901–05; House Mother, Miss Head's School, Berkeley, California, 1905–06; Assistant Registrar, University of Nevada, 1906–.

CAROLYN M. BECKWITH
Secretary to the President

Assistant Office Secretary, 1902–03; Secretary to the President, 1904–.

MRS. A. E. KAYE
Mistress of Manzanita Hall

Mistress of Manzanita Hall, 1904–.

MRS. M. E. PORTER
Matron of University Hospital

Matron of University Hospital, 1907–.

AFFILIATED ORGANIZATIONS

THE STATE MINING LABORATORY

STAFF

JOSEPH EDWARD STUBBS	President
GEORGE J. YOUNG	In Charge
W. S. TANGIER SMITH	Geologist and Mineralogist
JAY ARNOLD CARPENTER	Assistant
J. CLAUDE JONES	Assistant
CAROLYN M. BECKWITH	Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have them analyzed and assayed without cost. (Secs. 1402–1405, incl., Compiled Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that these must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens, or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be given to the sender, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which it came and all other matters that may be beneficial touching the same."

In compliance with the above section, reports have been rendered, and a record book kept. In order to make reports as accurate as possible, it is suggested that citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning value.

THE AGRICULTURAL EXPERIMENT STATION

THE BOARD OF CONTROL

The HON. JOHN SUNDERLAND (1907–1911) Chairman.....Reno
The HON. CHAS. B. HENDERSON (1907–1911).....Elko
The HON. A. A. CODD (1909–1913).....Goldfield
The HON. J. J. SULLIVAN (1909–1911).....Virginia City
The HON. FRANK WILLIAMS (1909–1913).....Good Springs
Mr. GEORGE H. TAYLOR, Secretary.....Reno

STAFF

JOSEPH EDWARD STUBBS, LL.D.....Director
P. BEVERIDGE KENNEDY, Ph.D.....Botanist, Horticulturist, Forester
GORDON HAINES TRUE, B.S.....Agronomist
SAMUEL BRADFORD DOTEN, B.A.....Entomologist
SANFORD CROSBY DINSMORE, B.S.....State Inspector Foods and Drugs
WINFRED BERDELL MACK, D.V.M.....Bacteriologist and Veterinarian
JAMES EDWARD CHURCH, JR., Ph.D.....Cooperative Observer in Climatology and Meteorology
CARL JACOBSON, Ph.D.....Station Chemist
CHARLES KNIGHT, B.S.....Assistant Agronomist
AMOS ARTHUR HELLER, A.M.....Assistant Botanist and Horticulturist
MILES BRYCE KENNEDY, B.A...Asst. State Inspector Foods and Drugs
THEODORE CLARK.....Farm Superintendent
Mrs. THOMAS COWGILL.....Librarian
CAROLYN M. BECKWITH.....Stenographer

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated $15,000 annually for the support of an Agricultural Experiment Station in each State and Territory of the Union.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the

prevention of the rise of alkali; the economic relation of entomology to agriculture; in fact the solving of all problems pertaining to agriculture which are or may be of importance to this State.

The results of the work of the Station are made public through bulletins and reports, which are sent free to all residents of the State who desire them.

The State Hygienic Laboratory

Winfred B. Mack Director
Oscar P. Johnstone Pathologist and Bacteriologist

The State Hygienic Laboratory was organized during 1909, under the provisions of an Act of the Legislature approved March 25, 1909. The object of the laboratory is to provide facilities for the diagnosis of the infectious diseases and for research into the nature, cause, and methods for the control of such diseases. The services of the laboratory staff are available to the physicians, health officers, and health boards of the State for the diagnosis of certain communicable diseases. Advice and assistance will, on request, be rendered the sanitary officials in the control of outbreaks of infection and in securing sanitary supplies of milk and water.

The results of the work of the laboratory are made public from time to time through bulletins, circulars and annual reports, and will be sent free on request to residents of the State who desire them.

ASSOCIATION OF UNIVERSITY ALUMNI

President.....JOHN W. WRIGHT, '05
Vice-President.....JAY A. CARPENTER, '07
Secretary-Treasurer.....Mrs. FLORENCE HUMPHREY CHURCH, '02

Executive Committee

THE OFFICERS SCOTT JAMISON, '00

ASSOCIATION OF NORMAL ALUMNI

President.....Mrs. MARY SNOW THURTELL, '90
Vice-President.....IRENE V. BROWN, '09
Secretary-Treasurer.....Mrs. ESTELLA RHODES PIERSON, '93

UNIVERSITY ADDRESSES

SECOND SEMESTER, 1908–1909

May 21, 1909. Brief talks on the Public School Work of the State by Miss Grace L. Moon, Fallon; Mr. James V. Comerford, Virginia City; Mr. F. E. Howard, Elko; Mr. D. B. Billinghurst, Reno.

COMMENCEMENT, 1909

Annual Baccalaureate Sermon, Sunday, June 6, 1909, by Bishop Edwin Holt Hughes, Bishop of the Methodist Episcopal Church.

Annual Commencement Address, Wednesday, June 9, 1909, by Honorable Horace F. Bartine, Chairman of the Railroad Commission.

FIRST SEMESTER, 1909–1910

September 3, 1909. President Joseph E. Stubbs, Address of Welcome to Students and Faculty.

September 10, 1909. Miss Gabrella T. Stickney: "Our Responsibility."

September 17, 1909. Dr. J. E. Church: "A Quarter Century of Polar Exploration; Its Whence and Whither."

MACKAY DAY
OCTOBER 22, 1909

Remarks by Dr. P. B. Kennedy for the Special Athletic Committee.

Remarks by John W. Wright, President of the Alumni Association.

Remarks by Walter W. Anderson, President of the Associated Students.

Address, presenting the Athletic Field, the Training Quarters, the Grand Stand, and the Colonnade to the Regents of the University of Nevada, by Clarence Hungerford Mackay of New York.

Address of Acceptance by John Sunderland, Chairman of the Board of Regents.

Address on behalf of the Board of Regents by Charles B. Henderson.

Address by Professor C. L. Cory of the University of California.

Address on behalf of the Honorary Board of Visitors by Frank H. Norcross, Chief Justice of the Supreme Court.

Address for the State by Senator Francis G. Newlands.

Address by Professor E. Whitney Martin of Stanford University.

Address by Colonel George H. Harvey of New York.

GENERAL ASSEMBLIES

October 27, 28, 29, November 2, 3, 1909. Reverend Jenkin Lloyd Jones of Chicago: Subjects: "Browning," "Burns," "Dickens," "Victor Hugo," "Tolstoy."

December 3, 1909. Reverend F. M. Willis: "A District School Seventy-five Years Ago."

SECOND SEMESTER, 1909–1910

January 16, 1910. Convocation Sermon by Bishop Henry D. Robinson: Text, "Get thee up unto the top of Pisgah and lift thine eyes westward, and northward and southward and eastward and behold it with thine eyes, for thou shalt not go over this Jordan."

March 4, 1910. Dr. A. C. Herre: "Vienna and Stiermark."

March 11, 1910. President Joseph E. Stubbs: "A Week in Arizona."

March 18, 1910. Dr. George Ordahl: "The Passing of Culture."

ORGANIZATION AND ADMINISTRATION

FOUNDATION

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko by a law approved March 7, 1873, but was removed to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University began with the academic year 1886–87.

The State Normal School was authorized by an Act of the Legislature approved February 7, 1887, and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS

The University maintains the following Colleges and Schools, which aim to meet the best ideals of modern University life and training:

I. THE COLLEGE OF ARTS AND SCIENCE:
 1. The School of Liberal Arts.
 2. The School of General Science.

II. THE COLLEGE OF AGRICULTURE:
 1. The School of Agriculture.
 2. The School of Domestic Science.

III. THE COLLEGE OF ENGINEERING:
 1. The Mackay School of Mines.
 2. The School of Mechanical Engineering.
 3. The School of Civil Engineering.

IV. THE STATE NORMAL SCHOOL.

V. THE UNIVERSITY HIGH SCHOOL.

REGENTS

The general management and control of the University is vested in a Board of Regents. The five members constituting this board are elected by the people.

THE PRESIDENT

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be Chairman of the Academic Council and of the Executive Committee of the Academic Council, and ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, subject to the approval of the Academic Council and Board of Regents, appoint the Executive and other standing committees designated as administrative and as academic and shall name the chairmen of such committees.

THE VICE-PRESIDENT

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE REGISTRAR

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the students and the administrative and academic committees.

He shall prepare, subject to the approval of the President and the Executive Committee, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be secretary of the Council and shall keep a record of its proceedings.

THE ACADEMIC COUNCIL

The Academic Council consists of the President of the University, all professors and associate professors, the Registrar, the Librarian, such assistant professors as have been upon the rolls of the Faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Regents, determine.

The Academic Council is vested with all of the powers and duties usually vested in the faculties of similar institutions.

All general University regulations, statutes, and rules as to the matters within the province of the Faculty, shall be initiated in and passed by the Academic Council, and shall be in force, subject to the power of disapproval in the Board of Regents and in the President of the University. However, no regulation, statute, or rule involving a change in the educational policy of the University in respect to the requirements of admission, the course of study, or the conditions of graduation, shall take effect as above until it shall have been submitted to the Board of Regents for their approval.

The Academic Council shall formulate the duties and control the policy of the several committees, excepting that appeals from the decisions of the several committees shall be made to the Executive Committee.

The Council shall recommend to the President of the University, and he to the Board of Regents, the candidates for graduation.

A majority of its members shall constitute a quorum of the Academic Council.

COMMITTEES

THE EXECUTIVE COMMITTEE

The Executive Committee shall consist of the President, the Vice-President, and five members of the Academic Council of the rank of Professor or Associate Professor. These members shall be appointed by the President of the University and approved by the Academic Council and the Board of Regents.

All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, and for the abolition of departments or chairs, shall be submitted by the President to the Executive Committee for approval before they may be submitted to the Board of Regents for its action.

In all cases, in presenting such matters to the Board of

Regents, the President shall state whether or not they have the approval of the Executive Committee.

The Executive Committee shall advise the President concerning any other matters which he may choose to refer to it.

OTHER STANDING COMMITTEES

The other standing committees shall be grouped as follows:

Administrative—

1. Student Affairs.
 a. For men.
 b. For women.
2. Athletics.
3. Public Exercises.
4. Literary Contests.
5. Public Health.
6. Delinquent Scholarship.
7. Military Affairs.

Academic—

1. Group Electives.
2. Admission and Advanced Standing.
3. Registration.
4. Graduation and Theses.
5. Schedule of Recitations and Examinations.
6. University Publications.
7. Library.
8. Graduate Courses.
9. Tutorial Committee.

Standing committees shall be appointed annually by the President, subject to the approval of the Executive Committee and the Board of Regents, and shall enter upon their duties the first of January of each year.

SPECIAL COMMITTEES

Special committees may be appointed by the President of the University, to which the Academic Council may assign the consideration of any matter within its jurisdiction.

THE COLLEGE FACULTIES

The College Faculties shall have the directing of the educational policies in their respective colleges, and shall recommend to the Academic Council changes in the requirements of admission, the course of study, and the conditions of graduation.

ADVANTAGES AND EQUIPMENT

ADVANTAGES OF SITUATION

Reno, the seat of the University, is a thriving community of fifteen thousand inhabitants. It is situated in the beautiful Truckee Valley, at the junction of three railroads, namely, the Southern Pacific Railroad, a trunk line between the East and the West; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railway. The imposing mountains which encircle the valley, the pure air and sunshine, give the town an enviable reputation for health and beauty. The numerous churches are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. The proximity of Reno to the famous Comstock Lode, the mines of Tonopah and Goldfield, and the copper mines of eastern Nevada, enables the School of Mines to offer a large amount of practical training in mining operations.

FUNDS

The endowments and appropriations on which the University has been founded and maintained are the following:

1. The donation of 21.15 acres of land by the Central Pacific Railroad, and the erection of a building in 1873–74 by the citizens of Elko at a cost of more than eighteen thousand dollars.
2. When the University was removed to Reno by an Act of the Legislature in 1885, the Board of County Commissioners of Washoe County paid to Elko County $20,000, and to the Board of Regents $5,000 to be expended in purchasing a site at Reno.
3. The fund derived from the Congressional Land Grant of July 2, 1862, the interest of which is included in the biennial appropriation.
4. Various appropriations by the State Legislature for buildings and other specified purposes.
5. The biennial appropriation by the State Legislature for the support of the University.
6. The Agricultural Experiment Station Funds, for research only, of $26,000 a year—the Hatch Fund, $15,000; the Adams Fund, for $11,000.
7. The Morrill College Fund of $40,000 a year for agricul-

ture and Mechanic Arts, apportioned to the College of Agriculture and the College of Engineering.

8. The gift of the farm to the University by the citizens of Washoe County for the benefit of the Agricultural Experiment Station. This farm consists of sixty acres of good land near the University and is entitled to ninety inches of water annually. It is worth now at least $40,000.

BUILDINGS AND GROUNDS

The University Campus has an area of forty-nine acres. It is beautifully located on an eminence overlooking the city. There are fourteen buildings now in use.

Morrill Hall is a three-story brick building with a large basement. The Library occupies the entire basement. The administrative offices of the President of the University and the Department of Mathematics occupy the first floor. The Departments of Ancient Languages and History occupy the second floor. The Commercial Department and the Department of Drawing occupy the third floor.

Stewart Hall is also a three-story and basement structure. In the basement are the rooms of the Department of Domestic Science and the office of the Superintendent of Buildings and Grounds. The first floor is occupied by the Educational, Modern Language, and English Departments. The second floor is devoted to the use of the University High School. The third floor is occupied by the Station Laboratory of the Botanical Department, and by the Department of Civil Engineering.

Hatch Station is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the Departments of Agriculture, Entomology, and Meteorology. The second floor is given to the Departments of Biology, Veterinary Science, Bacteriology, and the Hygienic Laboratory. The third floor is occupied as a general Biological Laboratory.

The Mackay Mining Building, the recent gift of Clarence H. Mackay, houses the Departments of Mining and Metallurgy, and of Geology and Mineralogy. It is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and a library occupy the space between the wings. The first floor contains the geological lecture room, office, and laboratory; the chemical laboratory, weighing rooms, library, and drafting room; the geological museum, assaying

laboratory, and metallurgical and mining laboratory. The second floor contains the mineralogical and research laboratories, mining lecture room and offices.

The ground floor of the Mechanical Building contains the machine shop, the blacksmith shop, and the boiler room. The machine shop is furnished with screw-cutting lathes, a polishing lathe, a shaper, a universal milling machine, a universal cutter grinder, bench vises, wet and dry emery wheels, alternating and direct-current dynamos, and a tool room equipped with small machine tools and experimental apparatus for the use of mechanical engineering students. The blacksmith shop has forges and the necessary tools. The second floor accommodates the wood-working shop. This shop is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools.

The Department of Physics occupies a substantial two-story brick building. The first floor contains the laboratories, balance room, darkrooms, storeroom and shop. The second floor contains the lecture room, the apparatus room, and the offices.

The Chemistry Building is a two-story, gray stone building, standing on the west side of the quadrangle. On the first floor are found the inorganic, qualitative and quantitative laboratories, a balance room, stock room, and the professor's private laboratory, which is equipped for electro-chemical work. The qualitative laboratory accommodates sixty-five students, and the quantitative, which is also used as an organic laboratory, accommodates thirty-six students. Both laboratories are supplied with hoods, gas, water, steam-evaporating pans, compressed air, and direct-current electricity. The chemical laboratory of the Agricultural Experiment Station occupies the south half of the second floor. This laboratory has been wholly remodeled and equipped for organic research. It contains four working desks supplied with gas, water, and steam, commodious hoods, motor-driven centrifuge, vacuum and compressed-air systems, electric ovens, etc. Adjoining this laboratory is an office for the research chemist, and one for the food and drug chemist. The second floor also contains a lecture room accommodating seventy persons, a grinding room, two stock rooms, a darkroom for photographic and polarimetric work, an office, and a department library. The basement is divided into two compartments, one being used as a furnace and combustion room, the other as an acid room. There is

need of an organic laboratory, a mechanical room and a distillation room. All the laboratories are heated by the central hot-water system.

The State Legislature, recognizing the importance of placing the benefits of the University within the reach of all the deserving young men and women of the State, authorized the building of two student halls, after the plan of such halls in use by students of the larger Eastern colleges, and appropriated thirty-five thousand dollars for the purpose. The first of these two buildings is known as Lincoln Hall. It is a tasteful and comfortable home for one hundred young men. The plans of Lincoln Hall were drawn after a careful study of the best modern college halls, and meet every requirement of a cultivated taste.

The second building, known as Manzanita Hall, is a large brick building with granite facings. Within the past year, the building has been doubled in size and many improvements made, with the result that today it is one of the finest college dormitories in the West. In the new part the rooms are arranged in suites of two—a study and a bedroom. The bedroom contains two single beds, two attractive dressers of oak or birdseye maple, a small table, and chairs. Each bedroom has two large closets. The study has a bookcase, a big leather-covered study table, and comfortable chairs. There are a few suites of three rooms, with two big bedrooms for four girls, and some with one large and one small room for three girls. The woodwork in all the rooms is stained dark-brown, and the walls are a lighter, but subdued, shade of the same color, toning in softly with the wood, making an admirable background for pictures and college pennants. There is a large recreation room, where the girls read and talk, play games, dance and sing, and a well-appointed drawing room, where the guests are received. The floors throughout the building are of maple. The building is well lighted, and comfortably heated from the central hot-water heating plant.

The Gymnasium is a modern structure 60 feet wide and 120 feet long. It is equipped both as an armory for the use of the Military Department and as a gymnasium for athletic training. The equipment is modern and ample for all college purposes. Convenient toilet rooms with hot and cold water and lockers for the use of all students are provided. The Gymnasium, on account of its convenience and size, is used as a hall for General Assembly and the more important University functions.

The home of the President is situated on the southeast corner

of the Campus. It is colonial in the general style of its architecture and is a fine, commodious home, an ornament to the University. It was built at a cost of $9,418.70. The ground upon which the house is built was leased by the Regents of the University, but when the Legislature appropriates the money to pay for the cost of building the house becomes the property of the University.

Between the Gymnasium and Lincoln Hall is situated the University Hospital. This is a one-story brick building and contains six rooms. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. Students may have any physician whom they prefer.

THE MACKAY FIELD

The natural amphitheater on the Campus, which had been leased to the University for a number of years by the late Regent Evans, was purchased for the University by Mr. Clarence H. Mackay and provision made for its improvement. In order to make room for other branches of athletics, such as basket-ball and tennis, the Nevada Legislature of 1909 made provision for the purchase of additional land to the south of the old field, so that now about ten acres of land is being used for athletic purposes. The improvements donated by Mr. Mackay include a Training Quarters Building, situated on the east side of the field. This building has showers, baths, locker and dressing rooms, a committee room, and a lounging room. Directly opposite to this on the west bank are the bleachers and colonnade. The natural slope of the bank has been utilized so that the field closely resembles the stadium used at the ancient Olympian games. There are seventeen tiers of concrete, with a colonnade for a covered grandstand in the rear. The seating capacity is about two thousand.

Situated between these structures is a full-sized Rugby football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard dash.

LIBRARIES AND LABORATORIES

The University Library is located in the basement of Morrill Hall. It contains seventeen thousand bound volumes, and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works and reference vol-

umes of various kinds. The books are catalogued according to the Dewey Decimal Classification System. The reading room is supplied with daily and weekly papers, and with many of the best scientific and literary periodicals. The library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. To the general public is extended the use of the library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students.

The Agricultural Experiment Station Library, of nearly eighteen hundred bound volumes and a large number of pamphlets, is in the northern wing of Hatch Station. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, general works on agriculture and related sciences, and on irrigation, and herd books of livestock associations. Many current agricultural periodicals are on the tables in the reading room. The library is catalogued and classified, and suited for ready reference. It is open daily, and, while intended primarily for the use of the Station Staff, it is also accessible to the public.

Mining Library—All reference books, text-books, technical journals, and works pertaining to geology and mineralogy, mining, metallurgy, and engineering are concentrated in one large study room which is conveniently located upon the ground floor of the building. This library is open at all times during the sessions.

Physical Laboratory—The work of the Physical Laboratory is carried on along four distinct lines, each with its separate rooms and its own special equipment. The general laboratory contains a laboratory for High-School Physics, with an equipment permitting a section of forty-eight students to work simultaneously on the same exercise; a Freshman and a Sophomore Laboratory for work in sound, light, magnetism, and electricity; and a shop. The equipment of the Freshman and Sophomore Laboratories, which is entirely new, consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the

work. Aside from the main laboratories there is a separate room for experiments in heat; a weighing room, containing four Becker balances for general use; a darkroom; and a department library and reading room, which is also available for student use while writing up the laboratory exercises. The department shop contains a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular and linear dividing engine, and a direct-current dynamo with two armatures, furnishing current at various voltages. All of the laboratories are supplied with water, gas, and electricity.

Laboratory for Quantitative Analysis—This laboratory accommodates thirty-six students. It is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

Laboratory for Qualitative Analysis—This laboratory will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas, and fume closets.

Experiment Station Laboratory—In this laboratory those students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

General Biological Laboratory—During the past summer the biological laboratory was remodeled, enlarged and refurnished. There are thirty-five laboratory tables, each of which is provided with a microscope, reagent lockers, and six drawers fitted with combination locks. The tables have plate-glass tops, resting on rubber mats, so that they cannot be injured by stains or other chemicals. In addition to these there are a few operating tables with zinc tops, designed for operating demonstrations and dissections. The general equipment and supplies are kept in wall cases and cabinets, made of quarter-sawed oak and similar to the tables in design. The department now has thirty-seven first-class combined microscopes, four of which are equipped with high-power lenses and all other accessories for the most delicate and precise microscopical work. Among the larger and more expensive instruments are an electric

incubator, a Lillie paraffine oven, an electric centrifuge, and sterilizer. An important adjunct to both the class and the laboratory work is a combined microscope and lantern-projection apparatus, which enables the instructor to project microscopic objects as well as photographic illustrations, magnifying up to 3,000 diameters, upon the screen, where it can be observed by the whole class at one time.

Histological and Embryological Laboratory—This laboratory is equipped with all the necessary apparatus for doing general or research work in these subjects.

Bacteriological Laboratory—This laboratory has also been recently fitted up with new apparatus for research in Pathology and Bacteriology. It is used chiefly for Experiment Station work, and for the work of the State Hygienic Laboratory, but is available for demonstration purposes for students taking elementary Bacteriology, and can accommodate a few students who desire to do more advanced work.

Station Botanical Laboratory—This laboratory is also used by advanced classes in Botany and Horticulture.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in Entomology. It contains also the Photographic Laboratory of the Experiment Station.

Geological and Mineralogical Laboratories—The Department of Geology and Mineralogy is provided with reference collections illustrating the minerals, rocks, and fossils, and with class collections for study and determination. The Mineralogical Laboratory is arranged, for the present, for the accommodation of single sections of forty students. There is, in addition, a laboratory fitted up for microscopic work, equipped with petrographical microscopes and the necessary accessories. It has also a set of mineral thin sections cut in definite direction, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. A separate grinding room is provided with apparatus for making thin sections of rocks and minerals. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides furnishes additional illustrative material for lecture work.

Chemical Laboratory of the Mackay School of Mines—The Chemical Laboratory is fully equipped with the usual desks, hoods, hot-plates, and air-baths. Each desk is provided with

gas, compressed air, and electricity. Steam connections are provided for drying coils and still. Electric air-baths and drying pans are provided for overnight work. A small electric-driven, five-jar, Abbe mill is in use for fine grinding tests. Four four-gallon slime agitators, driven by small electric motor, are used for slime tests. A direct connected, electric-driven exhaust fan draws the air from the hood in the parting room and from this laboratory. Next semester it is proposed to install a complete electrolytic outfit for lead, copper, and other determinations. The laboratory will accommodate sixteen students.

Weighing Room—Connected with both the Chemical Laboratory and the parting room is the weighing room. Substantial piers carry the balances. Both chemical and bead balances for assaying work are placed in this room. The equipment consists of two analytical balances and seven bead balances. Different makes of balances are in use, such as the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger.

Parting Room—The cleaning of beads, parting, and ignitions are provided for in a separate room, convenient to the weighing room and Assaying Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

Assaying Laboratory—The preparation of crucible charges and all furnace work is done in the Assaying Laboratory. This laboratory is equipped with six Thompson pulp scales, three double-muffle, soft-coal furnaces, three large oil fusion furnaces, four small oil-fired muffles, two coke muffle furnaces, and one coke fusion furnace. Crude oil and distillate are used for the oil furnaces, compressed air being used to spray the oil. The laboratory will accommodate twenty students.

Metallurgical and Mining Laboratory—The metallurgical equipment includes the following machinery, all of commercial size: a three-stamp battery and feeder, amalgamating plates on steel table, a four-foot Union concentrator, a Wilfley concentrating table, a two-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of one-ton capacity, a 3x8 roasting furnace, an eighteen-inch amalgamating pan, a sample crusher, and sample grinder.

The mining machinery equipment consists of an Ingersoll-Sergeant drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any mesh coarser than a 40 screen; coarse and fine concentration of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls—the roasting furnace enabling ores to be given a chloridizing or an oxidizing roasting before treatment in the vats—and, finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-h.p. and a 5-h.p. induction motor drive all the machinery through separate line shafts.

Steam and Gas Laboratory—The equipment includes two steam engines, one gas engine, three steam-engine indicators, one gas-engine indicator, Alden dynamometer, planimeters, speed indicators, gages, Crosby gage-tester, calorimeter, gas analysis outfit, pyrometer, and other pieces of apparatus essential in making tests on steam and gas machinery.

Electrical Laboratory—The equipment consists of one direct and one alternating-current generator, one direct and three alternating-current motors, three transformers, one Queen portable testing set, four voltmeters, six ammeters, three wattmeters, three multipliers, rheostats, and numerous other smaller pieces of apparatus.

Civil Engineering Laboratory—During 1909 a 200,000-pound capacity Riehle testing machine was purchased and installed for the testing of materials and to illustrate to the students of engineering the principles of the strength and elasticity of materials used in engineering work. This machine is automatic and autographic and up-to-date in every respect.

SCIENTIFIC COLLECTIONS

The northwest wing of the Mackay Building is devoted to a museum, in which the collections of the departments connected with the School of Mines are housed and exhibited. Besides general material, these include collections illustrating the mineral resources of the State of Nevada, the geology of several of its mining camps, and systematic collections of rocks, minerals, and ores. In addition the nucleus of collections illustrating the different types of mining machinery and appliances and the treatments of ores have been installed. The collections are being built up and enlarged as rapidly as possible, and

are being arranged and labeled so as to furnish all information possible to the general public as well as to the students. During the year the museum has received much additional material, especially from the Mining Congress at Goldfield, the Cole collection presented by Mr. Mackay, and the loan collection of the rocks and ores of Goldfield loaned by the United States Geological Survey.

GIFTS TO THE UNIVERSITY

The gift by Clarence H. Mackay of six acres at a cost of three thousand dollars, and the fitting up of this land, at a cost of fifteen thousand dollars, into a first-class athletic field.

The building of a training quarters and a grandstand and colonnade by Mr. Mackay, at a cost of thirty thousand dollars.

The gift of one thousand dollars by the Student Body for the fitting up of two out-of-door basket-ball courts.

The subscription by the Alumni of one thousand dollars for two tennis-courts.

NEEDS OF THE UNIVERSITY

1. Among other University needs is a library and administration building to cost with furnishings $250,000. The present space allotted to the Library, the basement of Morrill Hall, is inadequate. New books are rapidly accumulating, and during the last two years seven new book-stacks have been required. It is difficult to see where any more stacks can be placed in the present stackroom to meet the needs of the constant growth. Hence a new and larger abode for the Library is needed. Moreover, there should be a building especially designed and adapted to the needs of a library, prominent among which is a sufficient amount of light, which is not obtained in the basement. The book-stacks are necessarily large, and hence shut off the light from the windows, the Librarian frequently being obliged to use the light of a match in order to find a book. The new Library building should provide for the admission of light from above, through skylights, which would insure the diffusion of a good light throughout the Library. Another fact contributing to the need of a new building is the danger of fire in the present library. If the books were burned, some of them could not be replaced.

2. A biological building and museum for the use of the Department of Biology, the museum wing of this building to be used for the scientific collections in natural history so that they can be made available to students and to the public.

3. Scholarships. The friends of education, and particularly the friends of the University, are urged to consider the founding of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a university course, but whose financial resources are inadequate to obtain it for them. The University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands made upon it. No means of perpetuating a healthful and elevating influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the growing centuries.

4. An endowment of professorships in the University. The sum of $50,000 will provide an adequate endowment for a chair in the University, the interest of this endowment fund going to pay the salary of the professor of the special department.

LECTURES AND FACULTY ASSOCIATIONS

PUBLIC LECTURES

A general assembly of all the students of the University and all the members of the Faculty is held every Friday. This is the lecture service of the week, and is under the special direction of the President of the University. These weekly lectures are given by members of the Faculty and by men and women of special eminence in particular fields of study, travel, and business enterprise.

Lectures on various subjects by members of the Faculty of the University and Staff of the Agricultural Experiment Station will be given at different points in the State as arrangements can be made between the local communities and the University.

THE UNIVERSITY SCIENTIFIC ASSOCIATION

The University Scientific Association is an organization of those members of the Faculty who are interested in scientific research. The purpose of the organization is to broaden the outlook and to come in touch with scientific progress outside of one's own sphere of activity. Biweekly meetings are held in the lecture room of the Mackay Building. Two reports are presented and discussed at each meeting. The subjects of the reports are either the results of individual research, or articles of general interest that have recently appeared in the scientific journals. The meetings are open for visitors. Advanced students find the meetings of considerable value.

STUDENT AFFAIRS

GOVERNMENT OF THE STUDENTS

In the government of the University the largest liberty consistent with good work, good order, and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or the unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of University life are advised to remain at home or go elsewhere.

STUDENT ORGANIZATIONS AND PERIODICALS

The students have established fraternities, literary societies, the Crucible Club for engineering students, a Young Women's Christian Association, and the Associated Students, who direct athletics and debating and promote concert of action on the part of the students.

The students publish a weekly newspaper known as the *Student Record*. Each Junior class publishes an edition of the Junior annual known as the *Artemisia*.

ATHLETICS

The University is provided with an excellent gymnasium, and two directors, one for the men and the other for the women, are in charge of the Department of Physical Training.

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. Rugby football, baseball, track, basket-ball, and tennis are the games of special prominence at the present time. The policy of the University is to foster the spirit of honor and gentlemanliness in athletics, to suppress evil tendencies, and to see to it that athletic sports shall not encroach upon the claims of scholarship.

To represent the University of Nevada in any public contest, a student must conform to the following rules:

SECTION I

RULE 1. He must be an amateur.

RULE 2. If a candidate for a degree, he must attend regularly all the exercises of his class.

RULE 3. If a special student, he must give evidence of good faith regarding his intention to remain a full year in the University. He must also take courses amounting to not less than fifteen hours a week and attend regularly the exercises in such courses.

RULE 4. Like other students, he must maintain satisfactory standing in his class. A student who does not maintain a satisfactory standing in one school of the University cannot, by entering another, alter his status as regards these rules.

RULE 5. He must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

RULE 6. He must pass a physical examination satisfactory to the Committee on Athletics.

SECTION II

RULE 1. Schedules for all games must be submitted to the Faculty Committee on Athletics and approved by them.

RULE 2. A similar approval is required in the case of every individual intending to represent the University of Nevada in any single contest.

MILITARY SCIENCE AND TACTICS

1. Appreciation of the advantages of military drill and training in the education of the youth is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, and instils habits of obedience to lawful authority. A general knowledge of the system of national defense, of the organization of the Army and of the Navy, and their relation to the civil power, is considered essential to intelligent suffrage.

2. The department is in charge of an officer of the United States Army, detailed by the War Department as Professor of Military Science and Tactics, and as Commandant of Cadets.

3. Students receiving military instruction are designated "Cadets," and are organized into a battalion of infantry, officially designated as "The University of Nevada Battalion of Cadets."

4. The Battalion of Cadets is composed of all male students of the University, including those in the Preparatory, Commercial, Normal, and Special classes, with the following exceptions:

a. Students physically disqualified permanently. Those temporarily disqualified may be given light duty in the Signal Corps Detachment.

b. Students twenty-seven years of age or over.

c. Students who previously have had the military training required by the War Department.

d. The Battalion has its band. The students serving in this band are excused from other military duties. Ordinarily no cadet will be assigned to the band until he has satisfactorily completed the "schools of the squad, soldier, and company."

5. Cadets are required, upon entrance, to provide themselves with a uniform of prescribed design, consisting of blouse, trousers, cap, black shoes, white gloves, together with the insignia appropriate thereto.

6. Cadets will wear the uniform at all times while receiving military instruction.

7. The wearing of composite uniform is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

8. Appointments in the Battalion shall be determined by:
 a. Military ability, which shall be decided from a careful consideration of the following points:
 1. Character.
 2. Attendance.
 3. Military conduct.
 4. Zeal.
 5. Soldierly bearing.
 6. Aptitude for command.
 7. Knowledge of drill and other duties as determined by examination and practical application.
 8. Recommendation of superior officers.
 9. Standing in Department of Physical Culture.
 b. Class standing.
 c. Length of service in the Battalion.

Generally the commissioned officers are taken from the Senior class, the sergeants from the Junior class, the corporals from the Sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

10. Every cadet who is a candidate for graduation from any of the schools of the University will be required to complete the prescribed course of military instruction, aggregating 14 units. Other cadets will receive an amount of military training proportionate to the length of their attendance at the University.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military service will be forwarded to the War Department and to the Adjutant-General of the State.

13. The punishment to which cadets are liable, are:
 a. Suspension of privileges. Private reprimand.
 b. Suspension from the University. Reduction to ranks.
 c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Com-

mandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensable to discipline. Military authority will be exercised at all times, with firmness, kindness, and justice; superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to perform the prescribed military duties unless excused in advance by the President or the Commandant. In case of absence without previous excuse, a written explanation will be submitted upon resuming duty. In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to all of the University schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; provided, they are at least twenty years of age. The Committee on Admission and Advanced Standing, in consultation with the adviser, may grant exceptions to this rule for adequate reasons. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it is able to complete satisfactorily.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission

and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high-school teachers and members of the Faculty concerned with accrediting will be held each year on the day preceding the Academic meet.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1

For entrance to all colleges the candidates must present English a and b; Mathematics a and b; (Language other than English, 2 units[1]); American History and Civics, 1 unit; Science, 1 unit; and 9 additional units[2], to be distributed in the various colleges as follows:

1. In the College of Liberal Arts: 4 units of Latin; English c; 1 additional unit of History; and 3 other units, chosen as the candidate may desire.

2. For the College of General Science: 1 additional unit in Science (advanced); 2 units in Language other than English; and 6 other units, to be chosen as the candidate may desire.

3. For the College of Agriculture: 1 additional unit in any science; and 8 other units, chosen as the candidate may desire.

4. For the Engineering Schools: Mathematics c, d and e; 1 additional unit in Science (advanced); and 6 other units, to be chosen as the candidate may desire.

5. In the State Normal School: 2 units of Language other than English; 1 additional unit in History; and 3 units; to be chosen as the candidate may desire.

All candidates must offer at least 4 units of advanced work; that is, work regularly offered in the last two years of the High-School course. Those intending to enter the Engineering Schools are advised to prepare in Physics and Chemistry. All High-School students who intend to enter the University should plan their courses with reference to the University requirements for the Junior certificate.

Description of Admission Requirements

1. ENGLISH (4 units)

The requirement in English includes both the study of the literature listed in Groups I–V and the work in grammar, composition, and rhetoric outlined below.

[1]This requirement will go into effect August 1, 1914.
[2]August 1, 1914, these units will be reduced to 7.

used. Selections from Matzke's Spanish Reader, from Knapp's, or from an equivalent text, are to be read.

b (1 unit). For the second year Galdos's Marianella, Partir a Tiempo, Electra, El Pajaro Verde, and selections from Don Quixote, or equivalent texts, should be read.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry, or Hessler and Smith's Essentials of Chemistry, and an amount of laboratory work equivalent to that outlined in the Manuals which accompany these texts, should be completed. Emphasis should be placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY (½ or 1 unit)

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced.

12. BOTANY (1 unit)

One-half unit will be allowed to any high-school student who has an intelligent knowledge of Andrews's Botany All the Year Round, from page 1 to 233. (American Book Company.) $1.

For one unit the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pp. 289 to 293.

13. ZOOLOGY (1 unit)

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's Introduction to Zoology (The MacMillan Company, New York). Merril's Studies in Zoology (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoology at the time of entrance.

14. PHYSIOLOGY (1 unit)

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work.

A microscope and prepared slides of human or animal tissues are necessities. Martin's Human Body (Briefer Course), Hewe's High School Physiology, and Macy and Norris's Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING (½ unit)

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales, and cash books, etc., and should include thorough understanding of checks, notes, drafts, billing, and, generally, all of the papers used in modern business.

16. SHOPWORK (1 unit)

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than five units for such work.

17. DRAWING (½ unit)

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

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17. DRAWING (½ unit)

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GENERAL INFORMATION

EXPENSES OF STUDENTS

The railways of the State are generously cooperating with the Regents of the University by giving reduced rates to students when traveling to and from the University. The Southern Pacific Company, the Nevada Northern, the Las Vegas and Tonopah, the Nevada Central, and the Eureka and Palisade railroads will sell tickets to students at one-half the usual local rate. To obtain the benefit of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

All text-books used in the University may be purchased at any one of the bookstores in Reno at a price which covers the actual cost of purchasing and a profit to the dealer of from ten to fifteen per cent for handling.

The maintenance of its large and valuable laboratories is a constant and heavy expense to the University. It is impossible for the Regents to provide material in these laboratories free of all expense to the students. For this reason the Regents have established the following moderate charges for the material actually used:

For General Chemistry, per semester	$2.50
For Qualitative Chemistry, per semester	2.50
For Quantitative Chemistry, per semester	2.50
For Agricultural Chemistry, per semester	2.50
For Mineralogy, per semester	2.50
For Junior Assaying, first semester	5.00
For Junior Assaying, second semester	7.50
For Senior Metallurgy, per semester	10.00
For Typewriting, per semester	1.00
For Zoology 1, 3, 6, 7, each, per semester	1.00
For Botany 1, 2, 3, 4, 5, 6, each, per semester	1.00
For Zoology 2, 4, 20, each, per semester	2.00
For Hygiene 1 and 2, each, per semester	2.00

For Botany 20, per semester	$2.00
For Sewing, per semester	1.00
For Cooking, per semester	1.00
For Shopwork, per semester	2.00
For Physics 1 (Freshman), per semester	1.00
For Physics 3 (Sophomore), per semester	2.00
For Physics 20 (each Laboratory period per week), per semester	1.00
For History Syllabus, University, per semester	1.00
For History Syllabus, High School, per semester	.50

The following deposit fees will be required of students in the department to which the subject belongs, but will be returned to the student at the end of the semester, less the amount of breakage of or damage to material given:

For General Chemistry, per semester	$5.00
For Optical Mineralogy, per semester	5.00
For Geology 4, per semester	5.00
For Mineralogy 5, per semester	5.00
For Surveying (C. E. 1), per semester	5.00
For Railroad Surveying (C. E. 5), first semester	5.00
For Physics 1, per semester	5.00
For Physics 3, per semester	5.00
For Biology, one-half or more courses	2.00

A fee of $4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basket-ball, baseball, and track athletics, and debating. In return for the payment of this fee the student receives free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

MANZANITA HALL is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. The ventilation, heating, lighting, and the furnishing of the rooms, are of the very best. Young ladies coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6 feet, to put on mattress; 6 good towels; 2 large aprons for work in shop and

in laboratory; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

LINCOLN HALL is the College home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Richard Brown. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow slips, 20 by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

Rooms in private houses can be rented for $10 to $15 per month.

TABLE BOARD—For the accommodation of the students, the President of the University maintains a dining hall in commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and service have been recently reorganized with a view to securing board and table service of the most acceptable character. The price of table board for the coming year will be $16 a month, payable in advance. If the board is not paid until after the fifteenth of the month an additional charge will be made of twenty-five cents a day until the account is settled. If the bill is not paid by the last day of the month, the privileges of the dining hall will be denied until the bill has been paid. *No deviation will be made from the above regulations.* After the expenses of the dining hall have been fully met, any surplus is paid over to the Board of Regents to pay for service rendered in maintaining Manzanita and Lincoln Halls.

Table board can be obtained elsewhere at from $25 to $30 per month.

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES

	Low	*Moderate*	*Liberal*
Tuition	None	None	None
Board, 36 weeks	$144	$144	$250
Room, light, and fuel	18	18	72
Washing and sundries	20	30	40
Text-books and stationery	6	12	18
Laboratory and athletic fees	8	10	12
Totals	$196	$214	$392

AID TO STUDENTS

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework, and dining-hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

A few annual scholarships have been given for the purpose of assisting deserving students. Mr. and Mrs. Fred O. Norton will give fifty dollars a year for four years to the most deserving student in the School of Mines. The Delta Rho Sorority will give fifty dollars to the most deserving student in the University. The Regents' Scholarships—two of fifty dollars and one of twenty-five dollars—will go to students who show the all-around qualities which go to make successful young men and young women. The President will give fifty dollars to the most deserving student in the University, and the same amount to the most deserving student in the State Normal School. In addition, there is the Philo C. Bennett prize of sixty-four dollars for the best essay on the principles of free government.

MATRICULATION

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credential or examination he is given an admission card by the Registrar. This card must be presented to the Librarian before any books can be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION

METHOD OF REGISTERING

1. On registration day the student secures from the Registrar a student registration blank, upon which his studies for the semester are to be entered and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major professor as adviser, and approved by the chairman of the Committee on Group Electives and Graduation Schedules.

4. The signature of each instructor must be obtained for the courses registered in and the card must be signed by the adviser before being deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration, stamped by the Registrar. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

CLASSIFICATION OF STUDENTS

In registering, a student shall give his status as *Regular*, *Limited*, *Partial*, *or Special*, according to the rules following:

1. For "Regular" Freshman standing, a student must be accredited in all the required Preparatory work; or his entrance deficiencies must not exceed one high-school unit, and such deficiencies must be made good by the end of the Sophomore year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having two units of entrance deficiencies may register as a "Limited" Freshman, but these deficiencies must take precedence over all other work registered for. Unless a student is taking a majority of his work in the University, he shall be classified as a University High School student.

4. A "Limited" Sophomore, Junior, or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and departmental permission.

ENROLLMENT

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical culture. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the adviser and of the department concerned.

3. All courses finally enrolled in shall be completed. In case a course is elective, however, with the permission of the Registration Committee and the department concerned, a student may drop the course any time during the first twelve weeks of the semester, and the course will be canceled from his record.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

CONDITIONS AND FAILURES

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registrar's office and may subject the student to admonition, suspension, or dismissal. A student whose work is unsatisfactory may be placed on probation, and may be required to withdraw at any time thereafter if satisfactory improvement is not shown. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time, should obtain leave of absence from the Committee on Scholarship.

Each instructor will determine the final grade of students by any method that he may consider best adapted to his courses.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department.

3. Only one reexamination may be given for the removal of any condition. The regular time for such reexamination shall be the beginning of the college year.

4. Any condition not removed by the time the course is next repeated becomes a failure and is subject to the rules for failures; but, in case of special students, the Committee on Registration may grant exemption from this rule.

5. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the

NOTE—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

condition within the prescribed time shall be considered as having failed.

6. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Academic Council shall by vote permit an extension of time or the substitution of another course.

7. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration Committee.

THE JUNIOR CERTIFICATE

In all, except the Engineering Schools, the Junior certificate is granted to students who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit in English 1, in 38 other units of the work required in their college; and in 20 additional units. We advise that 8 of these electives be taken in the Freshman year, and 12 in the Sophomore year.

In the Engineering Schools the Junior certificate will be given to those who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit for the first two years' work required in their respective colleges. To all students receiving this certificate will be given the title of Associate.

GRADUATION

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school are required. Credit is given for work done in other institutions of similar rank and character.

To students with an average of 90 per cent, or over, in all of the work required for graduation the degree "With Honor" will be given.

THESIS REQUIREMENTS

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field

while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific and literary knowledge, and good arrangement, and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the Committee on Graduation and Theses not later than the first Monday in November, and all theses should be completed and presented to the Committee on Theses on or before the first day of the final examinations in May.

The thesis should be typewritten upon $8\frac{1}{2}$x11 paper and bound in a 9x$11\frac{1}{4}$ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS

SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE IN CANDIDACY FOR THE DEGREE OF BACHELOR OF ARTS

(Department of History)

By

JOHN EDWARD SMITH

Reno, Nevada

1908

DIPLOMAS AND BACCALAUREATE DEGREES

1. The Degree of Bachelor of Arts is conferred upon students who have completed in a satisfactory manner the four years' work of the School of Liberal Arts.

2. The Degree of Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the School of General Science, the School of

Mining Engineering, the School of Mechanical Engineering, the School of Civil Engineering, or the School of Agriculture.

3. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of High-School Grade, is awarded to students who have completed in a satisfactory manner the four years' work of the Advanced Normal Course.

4. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded to students who have completed in a satisfactory manner the work of the Elementary Normal Course.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Studies the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except within the approval of the major professor or professors and the Committee on Graduate Study.

A thesis will constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing, but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other

examiners as the Committee on Graduate Studies may appoint. In case semester examinations are taken, the grade received will be averaged with the oral examination and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science, upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

DEGREES OF MINING, MECHANICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Studies and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

5

examiners as the Committee on Graduate Studies may appoint. In case semester examinations are taken, the grade received will be averaged with the oral examination and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science, upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

DEGREES OF MINING, MECHANICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Studies and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

5

COLLEGE OF ARTS AND SCIENCE

FACULTY

JOSEPH EDWARD STUBBS President
ROBERT LEWERS Vice-President, Professor of Political Economy
HENRY THURTELL Professor of Mathematics and Mechanics
JAMES EDWARD CHURCH, JR.[1] Professor of the Latin Language and Literature
LAURA DE LAGUNA Professor of the Modern Languages
JEANNE ELIZABETH WIER Professor of History
PETER FRANDSEN[1] Professor of Biology
PATRICK BEVERIDGE KENNEDY Professor of Botany and Horticulture
ROMANZO ADAMS Professor of Education and Sociology
LOWE ABEEL MCCLURE Professor of Military Science and Tactics
W. S. TANGIER SMITH Professor of Geology and Mineralogy
MAXWELL ADAMS Professor of Chemistry
HERBERT WYNFORD HILL Professor of the English Language and Literature
ERNEST WHITNEY MARTIN Acting Professor of Latin and Greek
LEON WILSON HARTMAN Professor of Physics
CARL ALFRED JACOBSON Professor of Agricultural Chemistry
ALBERT W. C. T. HERRE Acting Professor of Biology
CHARLES HASEMAN Associate Professor of Mathematics
KATE BARDENWERPER Assistant Professor of Domestic Science
KATHERINE LEWERS Assistant Professor of Drawing
GEORGE ORDAHL Assistant Professor of Psychology and Education
J. CLAUDE JONES Assistant Professor of Geology and Mineralogy
REUBEN CYRIL THOMPSON Instructor in Latin and Greek
GUSTAVUS SWIFT PAINE Instructor in English
HELEN ANN MEIGHAN Director of Physical Training for Women
ELIZA HENRIETTA OVERMAN Assistant in Biology
SILAS EARL ROSS Assistant in Chemistry
RALPH LYON HARTLEY Assistant in Physics

AIM

The aim of the College of Arts and Science is two-fold:

1. To lay a foundation for the professions, both learned and technical, and

2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

[1]Absent on leave.

CONDITIONS OF ADMISSION

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1

For entrance to all colleges, the candidates must present English a and b; Mathematics a and b; (Language, other than English, 2 units[1]); American History and Civics, 1 unit; Science, 1 unit; and 9 additional units, to be distributed in the various colleges as follows:

1. In the College of Liberal Arts: Latin, 4 units; English c; 1 additional unit of History; and 3 other units, to be chosen as the candidate may desire.

2. For the College of General Science: 1 additional unit in Science (advanced); 2 units in Language other than English; and 6 other units, to be chosen as the candidate may desire.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE

The Degree of Bachelor of Arts is conferred upon students in the School of Liberal Arts, and the Degree of Bachelor of Science upon students in the School of General Science who have satisfactorily completed work aggregating 124 units credit. By an hour, or a unit credit, is meant the equivalent of work demanded by a lecture course meeting for one hour a week for one semester, or a laboratory course requiring two

[1] This requirement will go into effect August 1, 1914.

and one-half hours a week for one semester. The work of the first two years is in the main prescribed; that of the last two years is wholly elective, subject, however, to the rules of group and free electives. Students in the General Science course are required to take seven extra hours of Natural Science, as an equivalent of the Latin prescribed for students in the School of Liberal Arts. The work of the Freshman and Sophomore years is prescribed as follows:

SCHOOL OF LIBERAL ARTS

FRESHMAN YEAR

Subjects and Credits Required	*1st Sem.*	*2d Sem.*
English 1	3	3
Latin 1, 2, 3	4	4
Mathematics 1a, and 2 and 3	3	3
French 1, Greek 1, 2, 3, or German 1	4	4
History 1	2	2
Military 1 and 2, or Physical Culture.		

SOPHOMORE YEAR

English 4	3	3
Latin 2 and 3	3	3
History 2	3	3
Natural Science (for choice of subjects see below)	4	4
French 2, Greek 2, or German 2 and 3	3	3
Military 1 and 2, or Physical Culture.		

SCHOOL OF GENERAL SCIENCE

FRESHMAN YEAR

English 1	3	3
French 1, Greek 1, or German 1	4	4
Mathematics 1a, and 2 and 3	3	3
Physics 1	2	2
Chemistry 3 and 4	4	4
Military 1 and 2, or Physical Culture.		

SOPHOMORE YEAR

English 4	3	3
French 2, Greek 2, or German 2 and 3	3	3
History 2	3	3
Natural Science (for choice of subjects see below)	7	7
Military 1 and 2, or Physical Culture.		

While the student should as nearly as possible follow the outline of hours and subjects as here prescribed, he may, with the sanction of his adviser, defer some of his prescribed work until the Junior or Senior year.

The Natural Science prescribed for the Sophomore year shall be elected from the following courses:

Chemistry 3 and 4, Physics 2 and 3, Geology 1 and 2, Mineralogy 2 and 3, Zoology 1 and 8, Hygiene 1, and Botany 1. More advanced courses may be elected if the student has had the prerequisites. Students in the School of Liberal Arts intending to take a major in some science department in their Junior and Senior years should elect an elementary course in that department in the Sophomore year. Some of the above-named courses give less than the four units credit required, but the deficiency may be satisfied by the election of additional hours either in the group or free electives. All students intending to follow a science group will find it to their advantage to consult their major professor as to the best courses in science to elect in their Sophomore year.

JUNIOR AND SENIOR YEARS

Provided all the work of the Freshman and Sophomore years has been complete as prescribed, courses aggregating 60 units, or an average of 15 units in each semester, should be completed during the Junior and Senior years. Of these 60 units, 40—the group electives—must be chosen within certain correlated groups and with the advice and consent of the major or major and minor departments concerned. The remaining 20 units—the free electives—may be freely elected from any courses offered in the College of Arts and Science, provided that the requirements of the departments in which the work is elected are satisfied.

GROUP ELECTIVES

Each student in the College of Arts and Science shall, at the beginning of his Junior year, elect a department in which he wishes to do a considerable amount of work as his major department. In case any student so choose, he may elect a minor department also. If a student elects a major and not a minor department, he shall be required to elect forty hours' work in the two years, with the advice and approval of the head of his major department. The work of the major department shall be the correlating subject of the forty hours group electives. In case a student elects both a major and a minor department, the combined work of the two departments must represent a unity of aim, and the heads of the two departments shall constitute an advisory committee, of which the major professor shall be chairman. In this case, the elective group of forty hours must be selected with the advice and approval of the advisory committee.

Students in the School of Liberal Arts may select a major, or

a major and minor, from any of the following departments: Greek, Latin, French, German, English, Spanish, History, Law, Economics, Sociology, Education, Zoology, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics.

Students in the School of General Science may select a major, or major and minor, from any of the following departments: Zoology, Botany, Geology, Mineralogy, Chemistry, Physics, Mathematics, Education.

The particular grouping will depend on the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
Language-Literature Group	*Social Science Group*
Greek, Latin, French, German, English.	History, Law, Economics, Sociology.
3	4
Biological Science Group	*Physical Science Group*
Zoology, Botany, Chemistry, Geology.	Chemistry, Physics, Mathematics, Geology, Mineralogy.

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to also elect a considerable amount of History. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a Science major will often find it profitable to have a good reading knowledge of both French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Committee on Group Electives and Graduation Schedules, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

Each student shall make a written statement of the work he has accomplished during the Freshman and Sophomore

years and of the work he proposes to do under the direction of his major and minor professors during his Junior and Senior years. He shall also make a statement of the coordinating aim which gives unity to the proposed group. This statement shall be placed in the hands of the Committee on Group Electives and Graduation Schedules not later than the first week of the University year.

It shall be the duty of the Committee on Group Electives and Graduation Schedules to examine these statements carefully, and, if needs be, to interview the student presenting them and to determine whether such schedules conform to the rules governing the same. If they do thus conform they shall be approved, otherwise the discrepancy shall be pointed out and the student shall be directed again to consult with his major professor.

When any such group of electives has been approved by the Committee on Group Electives and Graduation Schedules it shall be considered as the work prescribed for graduation. Any student who shall complete the work of any such group, together with work aggregating twenty hours' credit—the free electives—to be chosen freely within the prescribed groups of departments, shall be entitled to graduate. It shall be the duty of the committee to determine for each candidate for graduation whether he has completed such work. The committee shall act as a committee, the individual members having no authority outside of the committee.

FREE ELECTIVES

Twenty hours, or an average of five hours in any one semester, may be freely elected from any of the foregoing courses offered in the College of Arts and Science, provided only that the requirements of the departments concerned are satisfied. In addition to these courses, the student may elect from subjects offered by the Department of Domestic Arts and Science in the College of Agriculture courses which may be counted toward the Degrees of B.A. or B.S., to an amount not to exceed one hour in any one semester nor four hours in all.

Each Junior student in the College of Arts and Science shall file with the Committee on Registration, not later than two days before registration, a form containing the group elective and free elective studies desired for the Junior and Senior years, with the signature of the major professor, or signatures of major and minor professors. It is advisable that students should plan their work for the Junior and Senior years as

early as the beginning of the Sophomore year, in order that the studies elected then may fit in with their later work.

THESES

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED NORMAL COURSE

Students in the College of Arts and Science may be registered in the Normal School, Advanced Course, during their Junior and Senior years by electing courses in Education aggregating ten hours. Such students shall, in addition to the courses in Education, have a group of thirty hours.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit in English 1, in 38 other units of the work required in their college, and in 20 additional units. It is advised that 8 of these electives be taken in the Freshman year, and 12 in the Sophomore year. To all students receiving this certificate will be given the title of Associate.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application, including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Studies the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Study.

A thesis will constitute a part of the prescribed course of

study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing; but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Study may appoint. In case semester examinations are taken the grade received will be averaged with the oral examinations and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

COURSES OF INSTRUCTION

I. Greek	XIV. Psychology
II. Latin	XV. Zoology
III. French	XVI. Hygiene
IV. Spanish	XVII. Botany
V. German	XXV. Domestic Science
VI. English	XXVI. Geology
VII. Music	XXVII. Mineralogy
VIII. Art	XXVIII. Chemistry
IX. History	XXIX. Physics
X. Law	XXX. Mathematics
XI. Economics	XXXVI. Drawing
XII. Sociology	XXXVII. Military Science and Tactics
XIII. Education	

I. GREEK LANGUAGE AND LITERATURE

PROFESSOR MARTIN, MR. THOMPSON

Primarily for the Junior Colleges

a. ELEMENTARY. An introduction to the Greek language, based largely upon the Greek element in English and leading to the rapid reading of the New Testament. This course may be taken by itself, and is open to all students. *First semester. Hours to be arranged. Four credits.* Professor Martin.

b. ELEMENTARY (continued). Rapid review of Greek Grammar, leading to the reading of Xenophon's Anabasis. Open to those who have taken Greek *a* and to others who satisfy the department of their fitness. *Second semester. Hours to be arranged. Four credits.* Professor Martin.

1. PLATO AND LYSIAS. Plato's Apology and Crito, and Lysias's Orations Against Eratosthenes, Against the Grain Dealers and For the Cripple. Open to those who have had Greek *a* and *b*, and to those who have satisfied the full entrance requirements in Greek. *First semester. Hours to be arranged. Three credits.* Professor Martin.

2. HOMER'S ODYSSEY. Introduction to the grammar, prosody, and criticism of Homer. After a more intensive study of the earlier books, the class will read, very rapidly, selected passages of such length as will give some appreciation of the Odyssey as a whole. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

3. GREEK PROSE COMPOSITION (first course). Review of Greek Grammar and the writing of simple connected narrative. Required of all Greek majors, and open to those taking Greek 1 and 2. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 1, 2, and 3 constitute the full year's work in Freshman Greek.

4. HOMER'S ILIAD. Rapid reading, and lectures and papers on problems of Homeric criticism. *First semester. Hours to be arranged. Three credits.* Professor Martin.

5. EURIPIDES. Introduction to Greek Tragedy. The Alcestis, Medea, and Iphigineia among the Taurians will be read and interpreted. Lectures on the scenic antiquities of the Greek drama and on the artistic form and structure of Greek tragedy. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

6. GREEK PROSE COMPOSITION (second course). The writing of longer connected passages based upon the Historians and Plato, with constant comparison of Greek and English idiom. Required of Greek majors and open to those who have taken Greek 3. *Both semesters. Hour to be arranged. One credit each semester.* Professor Martin.

Courses 4, 5, and 6 constitute the full year's work in Sophomore Greek.

Primarily for the Senior Colleges

7. SOPHOCLES AND ÆSCHYLUS. Greek Tragedy continued. The Antigone or Œdipus Tyrannus of Sophocles and the Agamemnon of Æschylus will be read and interpreted in class. *First semester. Hours to be arranged. Three credits.* Professor Martin.

8. THUCYDIDES. Selections from Books VI and VII, the Sicilian Expedition, will be read. Lectures, papers, and discussions on the rise, ascendency, and decline of the power of Athens. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

9. ARISTOPHANES. The Birds and Frogs. Lectures on the origin and growth of Greek comedy. *First semester. Hours to be arranged. Two credits.* Professor Martin.

10. HERODOTUS. Rapid reading of large portions of Books II and VIII. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

11. PLATO. The reading and interpretation of the Phædo. Lectures, papers, and discussions on the Greek schools and systems of philosophy. *First semester. Hours to be arranged. Three credits.* Professor Martin.

12. DEMOSTHENES. Oration on the Crown. Informal lectures and assigned readings on the Attic Orators and the life and times of Demosthenes. *Second semester. Hours to be arranged. Three credits.* Professor Martin.

13. GREEK NEW TESTAMENT. A study of the Gospel of Mark. Lectures on the grammar, lexicography, canon, and manuscripts of the New Testament. *First semester. Hours to be arranged. Two credits.* Professor Martin.

14. THEOCRITUS. Selected Idyls will be read and interpreted. Lectures on the characteristics and tendencies of Alexandrine poetry. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

Courses 7, 8, 9, and 10 are open to both Juniors and Seniors and will alternate with courses 11, 12, 13, and 14.

20. PRO-SEMINAR FOR UNDERGRADUATES. Introduction to the interpretation and criticism of classical authors. Lectures on paleography and the transmission of manuscripts. In 1909–1910 Theocritus will be the author for special study. Open to Seniors only. *Both semesters. Hour to be arranged. One credit.* Professor Martin.

21. THE GREEK EPIC IN ENGLISH. Lectures on the structure, growth, and criticism of the Homeric poems, with some consideration of the society and art of the earliest Greek civilization. This course is intended for students of literature in general, and is open to all. *First semester. Hours to be arranged. Two credits.* Professor Martin.

22. GREEK TRAGEDY IN ENGLISH. Lectures on the structure and interpretation of selected tragedies of Æschylus, Sophocles, and Euripides, with some consideration of the problems of the Greek theater and the manner of presentation of the antique drama. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

23. PRIVATE LIFE OF THE GREEKS. Lectures, with illustrations by stereopticon and photographs, aiming to give a systematic conception of Ancient Greek Life. Open to all students. *First semester. Hours to be arranged. Two credits.* Professor Martin.

24. GREEK ART. Lectures, illustrated with stereopticon and photographs, on the topography and monuments of Athens, and on the art and architecture of Ancient Greece. Papers and discussions on assigned topics in Greek religion and mythology. Open to all students. *Second semester. Hours to be arranged. Two credits.* Professor Martin.

Courses 21 and 22 (or Latin 21) will alternate with courses 23 and 24 (or Latin 23).

II. LATIN LANGUAGE AND LITERATURE

PROFESSOR CHURCH, MR. THOMPSON

Primarily for the Junior Colleges

1. CICERO AND LIVY. The De Senectute of Cicero and Book I of Livy will be read with close attention to forms and syntax. Collateral reading on the history and literature of Rome down to the Age of Augustus. *First semester, 10–11, M. W. F. Three credits. 201 Morrill Hall.* Professor Church.

2. HORACE. The greater part of the Odes and Epodes will be read and interpreted. Special attention will be given to the prosody and to the metrical reading of Horace. Informal discussions upon the literary history and social conditions of the Age of Augustus. *Second semester, 10–11, M. W. F. 201 Morrill Hall.* Professor Church.

3. LATIN PROSE COMPOSITION (first course). Review of Latin Grammar and the writing of simple connected narra-

tive with collateral reading in Nepos and the De Amicitia of Cicero. Required of all Latin majors and open to those taking Latin 1 and 2. *Both semesters. Hour to be arranged. One credit each semester. 201 Morrill Hall.* Professor Church.

4. PLAUTUS AND TERENCE. The Mostellaria of Plautus will be studied with special regard to the language and prosody. The Rudens of Plautus and the Andria of Terence will then be read rapidly with more emphasis upon the origin, development, and general characteristics of Roman comedy. *First semester, 9–10, M. W. F. Three credits. 201 Morrill Hall.* Professor Church.

5. TACITUS. Selections from the Annals will be read, with some consideration of the history and literary tendencies of the Early Empire. *Second semester, 9–10, M. W. F. Three credits. 201 Morrill Hall.* Professor Church.

6. LATIN PROSE COMPOSITION (second course).[1] The writing of longer connected passages based upon Livy. Constant comparison of Latin and English idiom accompanied by collateral reading in Livy, Books XXI and XXII. *Both semesters. Hour to be arranged. One credit each semester. 201 Morrill Hall.* Professor Church.

Primarily for the Senior Colleges

7. ROMAN SATIRE. Horace and Juvenal will be read in part. Lectures on the origin and development of satire among the Romans. *First semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

8. ROMAN ELEGIAC POETRY. Selections from Catullus, Tibullus, Propertius and Ovid. Lectures on lyric and elegiac poetry among the Romans. *Second semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

9. THE ROMAN NOVEL. Rapid reading of the Cena Trimalchionis of Petronius and the Cupid and Psyche of Apuleius. Lectures on the growth of the prose romance in Greek and Roman literature. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

10. PLINY'S LETTERS. Selected letters of Pliny will be read with constant regard to the times and state of society portrayed. Lectures on the epistolary art of the Ancients. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

11. CICERO AND SENECA. Selections from the philosophical

[1] Given especially for prospective candidates for the Rhodes Scholarship.

writings of Cicero and Seneca. Lectures and papers on the various schools of philosophy among the Romans. *First semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

12. PATRISTIC AND LATE LATIN. The Octavius of Minucius Felix and the Sanctæ Silviæ Perigrinatio. Lectures on the characteristics of later Latin literature with some consideration of the relation of late Latin to the Romance languages. *Second semester. Hours to be arranged. Three credits. 201 Morrill Hall.* Professor Church.

13. INTRODUCTION TO LATIN EPIGRAPHY. A large number of inscriptions of interest for form or content will be read. Lectures on the forms, linguistic peculiarities and classification of Latin inscriptions. This course will aim to give students a working knowledge of the Corpus Inscriptionum Latinarum. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

14. TEACHERS' COURSE. Lectures on the methods and problems involved in teaching Latin in secondary schools. Discussion and comparison of the texts in general use, with practice teaching under the supervision of the instructor. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

20. PRO-SEMINAR FOR UNDERGRADUATES. In 1909–10 the Eclogues of Vergil and the later pastoral poetry among the Romans will be taken for special study. Open to Seniors only. *Both semesters. Hour to be arranged. One credit. 201 Morrill Hall.* Professor Church.

Courses 7, 8, 9, 10 alternate with courses 11, 12, 13, 14.

21. COMPARATIVE EPIC. The Æneid of Vergil and the Divine Comedy of Dante will be read in translation. Lectures on the characteristics of epic poetry among the Romans and on the life and times of Dante, with informal discussion of the problems connected with the interpretation of the two poems. If possible, this course should be taken in connection with Greek 21. Open to all. *Second semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

23. ROMAN PRIVATE LIFE. Lectures on the private life of the Romans, illustrated with the stereopticon and photographs. Papers and assigned readings on the topography, monuments, and art remains of Rome and Pompeii. This course alternates with Greek 23. *First semester. Hours to be arranged. Two credits. 201 Morrill Hall.* Professor Church.

III. FRENCH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Primarily for the Junior Colleges

1. BEGINNING FRENCH. Drill in grammar and in translating simple English into French, and French into English. *Both semesters, 8–9, M. T. Th. F. 104 Stewart Hall.* Professor de Laguna.

2. SECOND-YEAR FRENCH. Translation of Daudet's Selected Stories, Dumas's Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoleon, Extraits de Memoires et d'Histoires, and Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9–10, M. W. F. 104 Stewart Hall.* Professor de Laguna.

Primarily for the Senior Colleges

3. THE FRENCH DRAMATISTS. Selected plays of Moliere, Racine, and Corneille, Hugo's Ruy Blas, Rostand's Cyrano de Bergerac and L'Aiglon. A synopsis or critique of each play read is required. Advanced prose composition. *104 Stewart Hall.* Professor de Laguna.

4. MODERN FRENCH. Poetry and prose, advanced prose composition. Essays in French on the works studied are required. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Not given 1909–10. 104 Stewart Hall.* Professor de Laguna.

5. RAPID READING. *Prerequisite:* 1 and 2. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

20. SEMINAR FOR UNDERGRADUATES. Old French: Grammar, phonetics, morphology, syntax. Reading: Chanson de Roland, Chretien de Troyes, Chevalier au Lion. *Both semesters. Hours to be arranged. One credit. 104 Stewart Hall.* Professor de Laguna.

IV. SPANISH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Primarily for the Junior Colleges

1. BEGINNING SPANISH. The course in Spanish has been laid out for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from textbook work is devoted to Spanish conversation. *Elective. Pre-*

requisites: Two years of Latin and two of French or an equivalent. *Both semesters. Hours to be arranged. Two credits. 104 Stewart Hall.* Professor de Laguna.

2. ADVANCED SPANISH. Modern Spanish novels and plays by standard authors. Selections from Le Sage's Gil Blas and Cervantes's Don Quixote. *Prerequisite:* Spanish 1. *Both semesters. Hours to be arranged. T. Th. Two credits. 104 Stewart Hall.* Professor de Laguna.

V. GERMAN LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Primarily for the Junior Colleges

1. ELEMENTARY GERMAN. Drill in grammar, reading of easy texts, and exercises in composition. *Both semesters, 8–9, daily. Four credits.* Miss Riegelhuth.

2. SECOND-YEAR GERMAN. Rapid reading of Leander's Traumereien, Bernhardt's Auf der Sonnenseite, and other simple stories and plays. Schiller's Maria Stuart, or Die Jungfrau von Orleans. Prose composition. *Prerequisite:* German 1 or two years of high-school German. *Both semesters, 9–10, M. W. F.; 1–2, T. Three credits.* Miss Riegelhuth.

Primarily for the Senior Colleges

4. GOETHE. Torquato Tasso and Faust, I. Two papers in German are required: a synopsis of Torquato Tasso and a characterization of Faust. History of German literature. Advanced prose composition. *Prerequisites:* German 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Not given 1909–10. 104 Stewart Hall.* Professor de Laguna.

5. HISTORY OF GERMAN LITERATURE. German Lyrics and German Novels of the Nineteenth Century. Critical papers in German are required. Advanced prose composition. *Prerequisites:* German 1 and 2.

20. SEMINAR FOR UNDERGRADUATES. The interpretation of the Nibelungenlied or Walther von der Vogelweide. *Both semesters. Hours to be arranged. One credit.* Professor de Laguna.

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Primarily for the Junior Colleges

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily

and weekly themes. *Both semesters, M. W. F. Section 1, 9–10, Section 2, 10–11. Three credits. Stewart Hall.* Mr. Paine.

2*a*. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. *Prerequisite:* English 1. *First semester. Hours to be arranged. Two credits. Stewart Hall.* Professor Hill.

2*b*. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisites:* English 1 and 2*a*. *Second semester. Hours to be arranged. Two credits. Stewart Hall.* Professor Hill.

3. ARGUMENTATION. The preparation of briefs and the presentation of arguments. *Both semesters. Hours to be arranged. Two credits. Stewart Hall.* Mr. Paine.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, 9–10, M. W. F. Stewart Hall.* Mr. Paine.

Primarily for the Senior Colleges

5. LITERATURE OF THE NINETEENTH CENTURY. (1) General survey of the period. (2) Tennyson and Browning. *Prerequisites:* English 1 and 4. *Both semesters, 10–11, M. W. F. Mackay Mining Building.* Professor Hill.

6. SHAKESPEARE. The interpretation of six plays. *Prerequisites:* English 1 and 4. (This course alternates with 5.) *Not given 1910–11.*

7. CHAUCER. The Canterbury Tales. *Prerequisites:* English 1 and 4. (This course alternates with 9.) *Not given 1910–11.*

8. MILTON. Minor Poems and Paradise Lost. *Prerequisites:* English 1 and 4. (This course alternates with 9.) *Not given 1910–11.*

9. OLD ENGLISH. Grammar and the reading of simple prose and verse. *Prerequisites:* English 1 and 4. *First semester, 11–12, M. W. F. Mackay Mining Building.* Professor Hill.

10. BEOWULF. *Prerequisites:* English 1, 4, and 9. *Second semester, 11–12, M. W. F. Mackay Mining Building.* Professor Hill.

11. THE MODERN DRAMA. Ibsen, Maeterlinck, Pinero, Shaw. (This course alternates with 12.) *Not given 1910–11.*

12. THE NOVEL. A rapid survey of the history and development of the novel, followed by a more thorough study of the Nineteenth Century novels. *Both semesters, 11–12, T. Th. Mackay Mining Building.* Professor Hill.

20. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged with individual students. One credit per semester. Library.* Professor Hill.

VII. MUSIC

MRS. WOOD

Primarily for the Junior Colleges

1. NOTATION AND SIGHT SINGING. The elements of vocal music. *Both semesters. Hours to be arranged. One credit.* In the second semester, one recitation will be choral practice with the University Chorus. *6 Morrill Hall.* Mrs. Wood.

2. MUSICAL APPRECIATION. Lectures in the history of Music, biography, and musical form, with frequent illustrative recitals. *Both semesters. Hours to be arranged. One credit. 6 Morrill Hall.* Mrs. Wood.

3. THEORY. Written and analytical work in elementary harmony. *Prerequisite:* Some knowledge of piano-forte, band, or orchestral instrument. *Both semesters. Hours to be arranged. Two credits. 6 Morrill Hall.* Mrs. Wood.

4. APPLIED MUSIC. Students of voice, piano, or solo instruments will be given credit for specified work under instructors approved by the head of the department. *Both semesters. Hours and credits to be arranged.*

5. THE UNIVERSITY CHORUS. Systematic study of choral music with special reference to University needs. Mrs. Wood.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Primarily for the Junior Colleges

1. DRAWING. Antique life and still life. *Hours and credits to be arranged.* Assistant Professor Lewers.

2. PAINTING. From nature in oil and water colors. *Hours and credits to be arranged.* Assistant Professor Lewers.

3. ORNAMENT. Historic ornament and conventionalization. *Hours and credits to be arranged.* Assistant Professor Lewers.

4. CLAY MODELING. *Hours and credits to be arranged.* Assistant Professor Lewers.

For description of other courses, see Art, State Normal School.

IX. HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER

Primarily for the Junior Colleges

1. MEDIEVAL HISTORY FROM THE FOURTH TO THE THIRTEENTH CENTURY. Beginning with the history of the Barbarian invasions the course traces the development of primitive Germanic institutions, the rise of the medieval church and the Papacy, the expansion of the Frankish Empire, and the establishment of feudalism. *Both semesters, 10–11, T. Th. 202 Morrill Hall.* Professor Wier.

2. THE HISTORY OF EUROPE FROM THE FOURTEENTH TO THE EIGHTEENTH CENTURY. The formation of modern States, important features of the Renaissance, political and social development, as well as international relations, since the Peace of Westphalia. Special attention is given to the rise of Russia and Prussia, and to the change in Western Europe from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. *Both semesters, 1–2, M. W. F. 202 Morrill Hall.* Professor Wier.

3. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for the study of law. *Prerequisite:* The character of the work will render desirable previous training in History on the part of the student. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall.* Professor Wier.

4. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND SINCE 1485. The political history is traced merely as a background for the study of the growth of the English Parliament and the Cabinet system. Comparisons are made between the existing forms of government and administration in the various countries of Europe and America. Important as a preparation for the study of law. *Not given 1909–1910.*

Primarily for the Senior Colleges

5. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Both semesters. Hours to be arranged. Three credits. 202 Morrill Hall. Given on request.* Professor Wier.

9. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoints rather than as a French local crisis. *Both*

semesters. Hours to be arranged. Two credits. 202 Morrill Hall. Not given 1909–1910. Professor Wier.

10. THE HISTORY OF THE PACIFIC SLOPE THROUGH THE EARLY AMERICAN PERIOD. *Both semesters. Hours to be arranged. Two credits. 202 Morrill Hall. Not given 1909–1910.* Professor Wier.

11. NINETEENTH AND TWENTIETH CENTURY HISTORY. A comparative study of the main events of recent history.

20. HISTORY SEMINAR. *Both semesters. Hours to be arranged. One credit. 202 Morrill Hall.* Professor Wier.

X. LAW

PROFESSOR LEWERS

1. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester, M. W. F. Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

2. INTERNATIONAL LAW. The principles of International Law as seen by the leading text-writers of America, England, and the Continent. *Second semester. Hours to be arranged. M. W. F. 301 Morrill Hall.* Professor Lewers.

3. ADVANCED LAW. The object of the course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisite:* Law 1 and 2. *Both semesters, M. W. F. Hours to be arranged. 301 Morrill Hall.* Professor Lewers.

XI. ECONOMICS

PROFESSOR LEWERS

1. POLITICAL ECONOMY. The Elements of Political Economy. Recitations on the text, lectures and assigned readings. Political Economy or some equivalent. *Both semesters, 10–11, M. W. F. 301 Morrill Hall.* Professor Lewers.

2. FINANCIAL HISTORY OF THE UNITED STATES. A detailed study of the experiences and legislation of the United States touching currency, coinage, and banking. The study will be founded, as far as possible, on examination of original sources. *Prerequisite:* Course 1. *Both semesters. Hours to be arranged. M. W. F. President's Office.* President Stubbs.

XII. SOCIOLOGY

PROFESSOR ADAMS

Primarily for the Senior Colleges

1. INTRODUCTION TO THE STUDY OF SOCIETY. The purpose of this course is to present the social process as a unity. The demand is not so much for detailed knowledge as for a correct point of view. Society is regarded as organic and evolutionary. The fundamental social institutions and their functions are studied, and their development through savagery, barbarism, and civilization is considered. *First semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

2. SOCIAL PROBLEMS. The aim of this course is to present a number of present-day problems from the point of view of Course 1. Among the problems are the labor problem, socialism, race problems, problems of the city, problems of rural communities, crime, pauperism. Not all of these subjects will receive attention during any one semester, but the course will include one or more of them selected according to the interest of the class. *Prerequisite:* Course 1. *Second semester. Hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

3. INDUSTRIAL INSTITUTIONS. A student of the evolution of modern industrial institutions with special reference to England and America. Social and educational problems growing out of industrial changes. *First semester. Hours to be arranged. Two credits. 101 Stewart Hall.* Professor Adams.

4. DOMESTIC INSTITUTIONS. A study of the human family. Primitive systems of marriage and relationship with reference to origin and function. Types of family in historic times—the Hebrew, the Greek, the Roman, the English, the American. Present problems of the home with special reference to American conditions. *Prerequisite:* Course 1. *Second semester. Hours to be arranged Two credits. 101 Stewart Hall.* Professor Adams.

20. RESEARCH COURSE. Students choosing Sociology for a major subject will choose a thesis subject near the beginning of the Senior year, and carry on reading and research work during both semesters. Arrangements will be made in each case for consultations and reports during the year. *Hours and credits to be arranged.* Professor Adams.

XIII. EDUCATION

PROFESSORS ADAMS AND ORDAHL

Courses 1, 2, and 3 in Psychology are prerequisites to all courses in Education. During 1910–11 Juniors who have not had Psychology may take Education 5 while taking Psychology. Students planning to take work in Education should take Hygiene 1 in the Freshman year and Psychology 1 and 2 in the Sophomore year.

Primarily for the Senior Colleges

4. PRACTICE TEACHING. Opportunities for observation and practice are afforded by the Reno Public Schools. The work is done under the supervision of the Department of Education. *Both semesters. Senior year. Hours to be arranged.* Professors Adams and Ordahl.

5. LOGIC. *First semester. Hours to be arranged. Two credits. 101 Stewart Hall.* Professor Adams.

7. HISTORY OF EDUCATION. The course is introduced by a few lectures on ancient and medieval education. Chief attention is given to the evolution of the more significant educational principles and institutions in the modern period. The aim is to orient the student in relation to the present educational questions. *9–10, M. W. F. 101 Stewart Hall.* Professor Adams.

8. AIMS AND VALUES IN EDUCATION. General and special aims in elementary and secondary education considered from the social and from the individual point of view. Values of vocational and of non-vocational subjects. The question of formal discipline and special disciplines. Values as depending upon mental type and upon method of instruction and study. *Second semester, 9–10, M. W. F. 101 Stewart Hall.* Professor Adams.

XIV. PSYCHOLOGY

ASSISTANT PROFESSOR ORDAHL

Primarily for the Junior Colleges

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes and the emotional life. *Prerequisites:* Hygiene 1, or its equivalent. *First semester, 8–9, M. W. F. Three credits.* Assistant Professor Ordahl.

2. COMPARATIVE PSYCHOLOGY. The parallels between animal and human behavior, the learning process, the fundamental animal and human instincts in relation to individual and racial

development. *Second semester, 8–9, M. W. F. Three credits.* Assistant Professor Ordahl.

Primarily for the Senior Colleges

3. CHILD AND ADOLESCENT PSYCHOLOGY. Development of the nervous system and growth of the body are traced in connection with mental development. Types of child and adolescent mind are considered in relation to problems of social adjustment. Intellectual and emotional difficulties peculiar to child and youth are treated in their relation to clear thinking and moral efficiency. *Second semester, 8–9, T. Th. Two credits.* Assistant Professor Ordahl.

4. ABNORMAL PSYCHOLOGY. The pathological aspects of consciousness; arrested mental development in children. The various forms of insanity and their causes. Hallucinations and illusions. *First semester. Hours to be arranged. Two credits.* Assistant Professor Ordahl.

5. PSYCHOLOGY OF SUGGESTION. Normal and abnormal suggestion; symptoms and conditions of hypnosis; phenomena of dual personality; educational uses of suggestion. Examination of mind and faith cures. *Two credits. Hours to be arranged.*

6. ESTHETICS. Development of the ideas of beauty. The psychological foundations of esthetic appreciation. *Three credits. Second semester. Hours to be arranged* Assistant Professor Ordahl.

Courses 4, 5, and 6 given on application of four or more students.

XV. ZOOLOGY

PROFESSOR FRANDSEN,[1] ACTING PROFESSOR HERRE, MISS OVERMAN

Primarily for the Junior Colleges

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. 101 Stewart Hall. Laboratory, 2–4:40, M. W. Four credits. 202 Hatch Hall.* Professor Frandsen,[1] Acting Professor Herre, and Miss Overman.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anat-

[1] Absent on leave.

omy in the high school and as a preparation for research work in anatomy. *Prerequisites:* Zoology 1 and Hygiene 1. *Both semesters, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre.

Primarily for the Senior Colleges

3. HISTOLOGY. The methods of killing, fixing, sectioning, staining, and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisites:* Zoology 1 and 2, Hygiene 1. *First semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre.

4. EMBRYOLOGY. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick and pig at successive stages of development. *Prerequisites:* Zoology 1, 2, 3, and Hygiene 1. *Second semester, 10–11, M. W. F. Laboratory 1–4:30, T. Th. Five credits. 202 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre. Courses 3 and 4 alternate with course 2.

8. EVOLUTION. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon science and life in general. *Second semester. Hours to be arranged. Two credits.* Professor Frandsen[1] and Acting Professor Herre.

20. RESEARCH COURSE. Students electing Zoology as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects selected from the different lines of zoological research, anatomy, physiology, histology, and embryology will be submitted to the choice of the student. If desired a student may elect thesis work in excess of the minimum one credit required. *Both semesters. Hours and credits to be arranged with individual student. 202 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre.

For description of other courses, see Zoology, College of Agriculture.

XVI. HYGIENE

PROFESSOR FRANDSEN,[1] ACTING PROFESSOR HERRE, MISS OVERMAN

Primarily for the Junior Colleges

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene,

[1]Absent on leave.

the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, T. F. Four credits. 101 Stewart Hall.* Professor Frandsen,[1] Acting Professor Herre, and Miss Overman.

2. GENERAL BACTERIOLOGY. Morphology and classification of bacteria. Methods of making cultures and studying the life processes of bacteria. Fermentation, putrefaction, etc., and their importance in the economy of nature. Pathogenic bacteria. *Second semester. Hours to be arranged. Four credits. 202 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre.

XVII. BOTANY

PROFESSOR FRANDSEN,[1] ACTING PROFESSOR HERRE, MISS OVERMAN

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W. 101 Stewart Hall. Laboratory, 2–4:30, M. W. Four credits. 301 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre.

2. CRYPTOGAMIC BOTANY. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:20, T. Th. Four credits. 202 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre.

3. COMPARATIVE HISTOLOGY OF PLANTS. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. *Prerequisites:* Botany 1 and 2. *First semester. Lectures, 9–10, M. W. Laboratory, 2-4:30, T. Th. 202 Hatch Hall.* Professor Frandsen[1] and Acting Professor Herre.

Primarily for the Senior Colleges

4. TAXONOMY AND PHYLOGENY OF THE ANGIOSPERMS. A study of the genetic relationship of the phanerogamous orders with practical studies in the laboratory relative to the flora of

[1] Absent on leave.

Nevada. *Prerequisite:* Botany 1 or its equivalent. *Both semesters. Hours to be arranged. Three credits. 105 Hatch Hall.* Professor Kennedy.

5. PHYSIOLOGICAL BOTANY. A course of experiments similar to that outlined in McDougal's Plant Physiology. *Prerequisites:* Botany 1, 2, and 3. *Second semester. Hours to be arranged.* Professor Frandsen.[1]

20. RESEARCH COURSE. This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Prerequisites:* Botany 1, 2, 3, or 4. *Both semesters. Hours to be arranged. Two credits. 105 Hatch Hall.* Professor Kennedy.

For description of other courses, see Botany, College of Agriculture.

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

1*a*. TEXTILES. Hygienic and historic dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2*a*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3*a*. HISTORY OF COOKERY. Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

One credit only is given each semester for work in the Department of Domestic Science.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

For the Junior and Senior Colleges

1*a*. DYNAMIC AND STRUCTURAL GEOLOGY. A general discussion of geologic forces and their results. Lectures and recita-

[1] Absent on leave.

tions. *First semester, 10–11, M. W. F. Three credits.* Required of all mining students; elective for all others. *Mackay Mining Building.* Professor Smith.

1*b*. HISTORICAL GEOLOGY. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships, and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *Prerequisite:* Geology 1a. *Second semester, 10–11, M. F. Two credits. Mackay Mining Building.* Professor Smith.

2. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisites:* Geology 1a, Mineralogy 1a and 1b, 3. *Second semester, 1–2, M. T. Two credits. Mackay Mining Building.* Professor Smith.

2*a*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens. *Prerequisite:* Geology 1a and 2. (The latter should be taken concurrently.) *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

3. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens, and in thin sections with the microscope. *Prerequisites:* Mineralogy 4 and 5, Geology 1a and 2. (The latter should be taken concurrently.) *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

Primarily for the Senior Colleges

4*a*. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 1a. *Second semester. Hours to be arranged. One credit.*

4*b*. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably a mining camp, where both the surface and underground geology may be investigated. The field for 1909 was in the vicinity of Nevada City, California. A concise report of the work, together with well-kept field notes, a finished geological map and cross-sections, will be required of each member of the class. *Prerequisites:* Geology 1a and 1b, 2, and 4a. *Four credits. Hours to be arranged.*

4*c*. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspects of the work will

be given. *Prerequisite:* Geology 4b. *First semester. Hours to be arranged. One credit.* Professor Smith and Assistant Professor Jones.

5*a*. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, non-metallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Geology 1a and b, 2, and either 2a or 3. *First semester. Three credits. Mackay Mining Building.* Professor Smith.

5*b*. ECONOMIC GEOLOGY. An advanced course treating the modes of occurrence, origin, and distribution of metalliferous deposits, with a study of the important mining camps of North America. *Prerequisite:* Geology 5a. *Second semester. Hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits. Mackay Mining Building.* Professor Smith.

21. GRADUATE COURSE. The original investigation of geologic problems, with seminar or discussion of current geological literature and special topics. *Hours to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Primarily for the Junior Colleges

1*a*. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits. Mackay Mining Building.* Assistant Professor Jones.

1*b*. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits. Mackay Mining Building.* Assistant Professor Jones.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical

specimens. *Prerequisite:* Mineralogy 1*a*. *Second semester. Two credits. Mackay Mining Building.* Assistant Professor Jones.

Primarily for the Senior Colleges

2. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–4:30, W. Two credits. Mackay Mining Building.* Professor Smith.

4. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Mineralogy 1a and b, or 2; Physics 2 and 3. *First semester, 1–2, M. T. Two credits. Mackay Mining Building.* Professor Smith.

5. OPTICAL PROPERTIES OF MINERALS. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently). *First semester, 1–4, F. One credit. Mackay Mining Building.* Professor Smith.

6. GRADUATE COURSE. To students suitably prepared opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged. Mackay Mining Building.* Professor Smith, Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND JACOBSON, ASSISTANT PROFESSOR DINSMORE, INSTRUCTOR HARTLEY, ASSISTANTS KENNEDY AND ROSS

Primarily for the Junior Colleges

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Open to students in the Colleges of Liberal Arts, Science, and Agriculture who have not presented matriculation chemistry. *Both semesters. Hours to be arranged. Two credits.* Mr. Hartley.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. 101 Chemistry Building. Two credits.* Professor Adams and Mr. Ross.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Two credits.* Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Two credits.* Mr. Ross.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. Open to students who have completed Chemistry 3 and 4. *Either semester, 2–4:30. Three credits. 102 Chemistry Building.* Professor Adams.

6. QUANTITATIVE ANALYSIS. Special determinations in Analytical Chemistry will be assigned to meet the demands of the individual student and the department in which the degree is sought. Open to students who have completed Chemistry 5. *Either semester, 2–4:30. Three credits. 102 Chemistry Building.* Professor Adams.

Primarily for the Senior Colleges

7. ORGANIC CHEMISTRY. Lectures on the carbon compounds. Open to students who have completed Chemistry 3 and 4. (Given in alternate years with Chemistry 16 and 17.) *Both semesters, 10–11, T. Th. Two credits. 206 Chemistry Building.* Professor Adams.

8. ORGANIC CHEMISTRY. A laboratory course given in connection with Chemistry 7. (Given in alternate years with Chemistry 11.) *Both semesters, 2–4:30, M. T. Two credits. 102 Chemistry Building.* Professor Adams.

11. INORGANIC PREPARATIONS. A laboratory course giving practice in the preparation and purification of inorganic chemical compounds. *Prerequisite:* Chemistry 5. (Given in alternate years with Chemistry 8.) *Second semester, 2–4:30, M. T. Two credits. 102 Chemistry Building.* Professor Adams.

20*a*. THESIS COURSE FOR UNDERGRADUATES. Laboratory and library work on special topics to be chosen by the student in consultation with the instructors. Open to students who have completed Courses 6, 7, 8, and 11. *Second semester. Hours and credits to be arranged.* Professors Adams, Jacobson, and Dinsmore.

12. INDUSTRIAL CHEMISTRY. A lecture course on the application of chemical principles to the industrial arts. The course includes the manufacture of acids, alkalies, cements, glass, pottery, explosives, dyes, sugars, soaps, paints, varnishes, and numerous other commercial products. *Both semesters. Two credits. Hours to be arranged.* Professor Dinsmore.

13. TECHNICAL ANALYSIS. A laboratory course to accompany Chemistry 12. The analysis of certain commercial products that will suit the requirements of the individual student. *First semester. Two credits. Hours to be arranged.* Professor Dinsmore.

Primarily for Graduate Students

14. PHYSICAL CHEMISTRY. A lecture course correlating facts and theories concerning chemical reactions, solution, vapor-tension, osmotic pressure, viscosity, polarimetry, electrical-conductivity, thermo-chemistry, chemical dynamics, and equilibrium, and related phenomena. *Both semesters. Hours to be arranged. Two credits. Prerequisites:* Chemistry 7, 8, and Physics 3. Professor Jacobson.

15. PHYSICAL CHEMISTRY. A laboratory course to accompany Chemistry 14. *Second semester. Two credits. Hours to be arranged.* Professor Jacobson.

16. HISTORY OF CHEMISTRY. A lecture course on the history and development of the science of chemistry. (Given in alternate years with Chemistry 7.) *First semester, 9–10, W. Th. F. 206 Chemistry Building. Two credits.* Professor Adams.

17. ADVANCED ORGANIC CHEMISTRY. A lecture course on special chapters in organic chemistry. *Prerequisites:* Chemistry 7, 8, and German 2. (Given in alternate years with Chemistry 7.) Professor Adams.

18. RADIOACTIVITY. A lecture course on the radioactivity of ores and elements. Methods of testing and properties of the Alpha, Beta, Gamma and X rays. Radium emanation and its bearing upon the degradation of the elements. Open to students who have completed Chemistry 14 and Physics 5. *First semester, 10–11, F. One credit.* Professor Jacobson.

20*b*. THESIS COURSE FOR UNDERGRADUATES. Laboratory and library work on special topics to be chosen by the student in consultation with the instructors. *Both semesters. Prerequisites:* Courses 6, 7, 8, 9 and 10. Professors Jacobson and Dinsmore.

21. THESIS COURSE FOR GRADUATE STUDENTS. Special problems for research, chosen in consultation with some member of the department, and carried out under his direction. No student will be admitted to this course who has not completed three years' work in Chemistry. *Hours to be arranged.* Professors Adams, Jacobson, and Dinsmore.

XXIX. PHYSICS

PROFESSOR HARTMAN

Primarily for the Junior Colleges

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition but with a deficiency in this subject. The class-room

and laboratory work of this course will include that performed by students in Physics a, with one additional lecture or recitation per week. Plane Geometry is a prerequisite. *Both semesters. Hours to be arranged. Three credits.*

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisites:* Mathematics 1b and 7; Physics a or Physics 1. *Both semesters, 9–10, daily. Five credits. 5, 6 and 11 Physics Building.*

3. PHYSICAL MEASUREMENTS. Experimental work in heat and mechanics, sound and light, electricity and magnetism of distinctly quantitative character is done. The methods selected involve fundamental physical principles, and illustrate their most important applications. *Prerequisites:* Mathematics 1b and 7; Physics 1. *Both semesters, 2–4:30, W. Th. One credit. 5 Physics Building.* Professor Hartman and Mr.

Primarily for the Senior Colleges

4. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisites:* Physics 1, 2, and 3. *Second semester, 2–4:30, T. W. One or two credits.* Professor Hartman and Mr.

5. HEAT AND THERMODYNAMICS. Lectures and recitations accompanied by experimental work of a quantitative character. This course, together with Physics 6, is introductory to Mathematical Physics. Many of the more difficult subjects that were merely touched upon in Physics 1 will be fully treated. *Prerequisites:* Physics 1, 2, 3, and Mathematics 7, 8, 9. *Both semesters, 8–9, T. Th. Two credits. 11 Physics Building.* Professor Hartman.

6. LIGHT AND PHYSICAL OPTICS. Lectures with experimental illustration on selected topics in light, including discussion of wave theory, diffraction, interference, resolving power of optical instruments, dispersion and absorption, spectrum analysis, double refraction and polarization. *Prerequisites:* Physics 2, 3; Mathematics 7, 8, and 9. *Both semesters, 8–9, T. Th.* (Not given in 1910–1911.) Professor Hartman.

7. PHYSICAL OPTICS. Laboratory exercises in connection

with Course 6. *First semester, 2–4:30, M. W. Two credits.* (Not given in 1910–1911.) Professor Hartman.

8. HISTORY OF PHYSICS. Lectures and recitations. Preparation of reports and discussion of assigned topics by members of the class. *Prerequisites:* Physics 1, 2, 3. *Both semesters, 10–11, Th. One credit. 11 Physics Building.* Professor Hartman.

9. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisite:* Physics 2. *First semester, 8–9, T. Th. Two credits.* Professor Hartman.

20. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Hartman.

XXX. MATHEMATICS

ASSOCIATE PROFESSOR HASEMAN

Primarily for the Junior Colleges

1*a*. ALGEBRA. Special emphasis is placed upon the following subjects: ratio, proportion, variation, progressions, undetermined coefficients, the binominal theorem, logarithms, series, and the theory of equations. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, and the sphere. *Second semester, six weeks. One credit. 107 Morrill Hall.* Associate Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, twelve weeks. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy with a study of the solar system, the stars, comets, etc. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to certain problems of practical astronomy. The theory and the use of the transit instrument. The determination of time, latitude and longitude. *Second semester. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

7. ANALYTIC GEOMETRY. A study of the point, straight line, transformation of coordinates, conic sections and the general equation of the second degree. A short time will be

devoted to analytic geometry of three dimensions. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminant forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester. Five credits. 107 Morrill Hall.* Associate Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

15. HISTORY OF MATHEMATICS. Lectures and assigned reading on the history of the mathematical science. *First semester. Hours to be arranged. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

For students who desire to major in Mathematics the following more advanced courses can be arranged at any time: Solid analytic geometry, theory of equations, advanced calculus, differential equations, theory of numbers, theory of functions of complex, variable, etc.; also, course in the application of mathematics to physics.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT McCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. Th. F. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations. Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Four semesters, 11–12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Four semesters, 11–12, W. One-half credit.* Lieutenant McClure.

[1] For exceptions, see Organization of Battalion of Cadets, page 44.

XXXVIII. PHYSICAL TRAINING FOR WOMEN

MISS MEIGHAN

PHYSICAL CULTURE. This course is offered to all young women of the University, and required in the Freshman and Sophomore years, as part of the regular work. Two hours of work each week are required of all students taking the course. Upon entering the class all students are carefully examined by a physician, with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies is solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium, make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse waist and bloomers, with regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE

2. SCHOOL OF DOMESTIC SCIENCE[1]

[1]The School of Domestic Science is as yet only partially organized, a complete organization awaiting the accumulation of a sufficient reserve.

COLLEGE OF AGRICULTURE

FACULTY

JOSEPH EDWARD STUBBS President
HENRY THURTELL Professor of Mathematics and Mechanics
PETER FRANDSEN[1] Professor of Biology
P. BEVERIDGE KENNEDY Professor of Botany, Horticulture, and Forestry
SAMUEL BRADFORD DOTEN Professor of Entomology
GORDON HAINES TRUE Professor of Agriculture and Animal Husbandry
W. S. TANGIER SMITH Professor of Geology and Mineralogy
MAXWELL ADAMS Professor of Chemistry
WINFRED BERDELL MACK Professor of Bacteriology and Veterinary Science
HERBERT WYNFORD HILL Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN Professor of Civil Engineering
LOWE ABEEL MCCLURE Professor of Military Science and Tactics
CARL ALFRED JACOBSON Professor of Agricultural Chemistry
ALBERT C. HERRE Acting Professor of Biology
CHARLES HASEMAN Associate Professor of Mathematics
CHARLES S. KNIGHT Assistant Professor of Agronomy
J. CLAUDE JONES Assistant Professor of Geology and Mineralogy
KATE BARDENWERPER Assistant Professor in Domestic Science
SANFORD CROSBY DINSMORE Assistant Professor of Agricultural Chemistry
ACHILLES CALLOWAY GOUGH Instructor in Mechanical Engineering
NORMAN CHATFIELD Instructor in Mechanical Engineering
GUSTAVUS SWIFT PAINE Instructor in English
AMOS ARTHUR HELLER Instructor in Botany and Horticulture
HELEN ANN MEIGHAN Director of Physical Training for Women
ELIZA HENRIETTA OVERMAN Assistant in Biology
SILAS EARL ROSS Assistant in Chemistry

AIM

The aim of the School of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operations of farming, gardening, and stock raising, but also to give such training in

[1] Absent on leave.

English, mathematics, and the sciences as will furnish a well-rounded education.

EQUIPMENT

The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, and where representatives of different breeds of pure-bred farm animals are available for class work, furnishes a valuable equipment for the study of those subjects directly related to practical agriculture.

CONDITIONS OF ADMISSION

SCHOOL OF AGRICULTURE

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from the accredited school or not. The examination will be held in September of each year.

4. All new students of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

XVIII. HORTICULTURE

PROFESSOR KENNEDY, MR. HELLER

Primarily for the Junior Colleges

1. GENERAL HORTICULTURE. Fruit growing, vegetable gardening, the propagation of plants, pruning, grafting, budding, pollination, the making of lawns, ornamental shrubs and the beautifying of home and farm grounds. *Second semester. Hours to be arranged. Lectures and Laboratory. Four credits. 303 Stewart Hall.* Professor Kennedy and Mr. Heller.

Primarily for the Senior Colleges

2. FLORICULTURE. The growing of flowers for home decoration and for market. Greenhouse management and construction. *First semester. Two credits. Hours to be arranged.* Professor Kennedy.

3. VEGETABLE GARDENING. The general principles underlying the growing of vegetables for the home and market, both under glass and in the open. *Green:* Vegetable Gardening. *Second semester. Hours to be arranged. Two credits. 303 Stewart Hall.* Professor Kennedy.

4. THE EVOLUTION OF CULTIVATED PLANTS. The discussion of organic evolution as applied to the modification of plants, particularly those in cultivation. *Prerequisites:* Botany 1 and Horticulture 1. *First semester. Hours to be arranged. Two credits.* Mr. Heller.

5. LANDSCAPE GARDENING. The general principles governing outdoor art, with sundry suggestions for their application in the commoner problems of gardening. *Waugh:* Landscape Gardening. *Second semester. Hours to be arranged. Two credits. 303 Stewart Hall.* Professor Kennedy.

6. PLANT BREEDING. The fundamental principles governing the amelioration of plants and the methods of producing new varieties of fruits and ornamental plants. *De Vries:* Plant Breeding. *Bailey:* Plant Breeding. *Prerequisites:* Horticulture 1 and Botany 1. *First semester. Hours to be arranged. Five credits. 303 Stewart Hall.* Professor Kennedy.

XIX. FORESTRY

PROFESSOR KENNEDY

Primarily for the Junior Colleges

1. ELEMENTARY FORESTRY. The effects of deforestation on the water supply, forest protection, and regeneration; the use

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit in English 1, in 38 other units of the work required in their college; and in 20 additional units. It is advised that 8 of these electives be taken in the Freshman year, and 12 in the Sophomore year. All students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

The Degree of Bachelor of Science in Agriculture is conferred upon students who have satisfactorily completed the full course of study in the School of Agriculture as given below. The term of credit denotes the amount of work required by a lecture course meeting one hour a week for one semester, or a laboratory course requiring two and one-half hours a week during one semester.

SCHOOL OF AGRICULTURE

COURSE OF STUDY

FRESHMAN

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
English 1		3	English 1		3
Mathematics 1a		3	Mathematics 2a, 3a		3
Zoology 1	2	2	Botany 1	2	2
Agronomy 1		4	Animal Husbandry 1		4
Mechanic Arts 1	1		Mechanic Arts 2	1	
Elective		3	Elective		3
Total		18	Total		18

SOPHOMORE

First Semester			*Second Semester*		
English 4		3	English 4		3
Chemistry 1, 2 or 3, 4	2	2	Chemistry 1, 2 or 3, 4	2	2
Animal Husbandry 4	2	2	Horticulture 1	2	2
Agronomy 5		4	Agronomy 2		4
Elective		3	Elective		3
Total		18	Total		18

JUNIOR

First Semester			*Second Semester*		
Agronomy 3, or Horticulture 2, 4		4	Animal Husbandry 3, 5, or Horticulture 3, 5		4
Economic Botany	1	2	Economic Entomology	1	2
Chemistry 9, 10	2	2	Chemistry 9, 10	2	2
C. E. 1 (Surveying)	2	2	C. E. 11 (Irrigation)	2	2
Elective		3	Elective		3
Total		18	Total		18

the special uses of these crops, as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plan for the rotation of soiling crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—The laboratory work will include the examination of samples of the standard varieties of grasses, clovers and other forage plants; the study of grass, clover and alfalfa seeds with reference to quality, purity and freedom from adulterants and weed seeds; the identification of seeds of noxious weeds which may be found in grass, clover or alfalfa seed. *First semester. Hours to be arranged. Five credits.* Assistant Professor Knight.

5. SOILS. This course includes a study of the nature, functions, origin, texture, composition, and kinds of soil; the relations of soil and water; air and sunlight; the treatment of soils to maintain fertility; and their cultivation in connection with the growing of crops. *First semester. Hours to be arranged. Four credits.* Assistant Professor Knight.

Primarily for the Senior Colleges

6. FARM MACHINERY. This course will consist largely of laboratory work and will include the taking down and setting up of different types of field machinery; it includes the practical application of the mechanical theories and principles taught in the class room, which will give the student a broader conception of these truths, and make them easier to grasp and retain, and more beneficial to the student. Lectures, outside reading and topic work. *Second semester. Hours to be arranged. Five credits.* Assistant Professor Knight.

7. FARM MANAGEMENT. This course will include a discussion of farm problems, such as those relating to the selection of a farm, types of farming, the laying out and equipment of farms, and the business affairs connected with farming. Professor True.

8. IRRIGATION. A brief review of the history of irrigation, the development of irrigation law, and the doctrine of appropriation. A study of the relation of rainfall, evaporation and seepage to irrigation; measurement of water upon the farm, the effect of irrigation upon the land and how to apply the growing crops. This is a study of irrigation problems from the water-user's point of view rather than that of the engineer. *Five times a week. First semester.* Professor True.

XXI. ANIMAL HUSBANDRY

PROFESSOR TRUE

Primarily for the Junior Colleges

1. BREEDS OF LIVE STOCK. A study of the origin, development, characteristics, and uses of the pure breeds of farm animals. For illustration the animals of the University Farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *First semester. Hours to be arranged. Four credits. 101 Hatch Hall.* Professor True.

2. ANIMAL BREEDING. A discussion of the principles underlying the art of breeding, the aim of which is to develop, maintain, and improve the various breeds and types of farm animals and farm crops, studied with special reference to their application to breeding of farm animals. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

3. FEEDING ANIMALS. A study of the principles underlying, and problems connected with, the feeding of farm animals. *Smith:* Profitable Stock Feeding. *First semester. Hours to be arranged. Two credits. 101 Hatch Hall.* Professor True.

Primarily for the Senior Colleges

4. STOCK JUDGING. Practice in judging live stock, the aim of which shall be to make the student familiar with the points of excellence in the various breeds of farm animals. *Craig:* Judging Live Stock. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

5. LIVESTOCK REGISTRATION. A course intended to familiarize the student with the details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them, a study of pedigrees, and how to keep herd records. *Second semester. Hours to be arranged. Two credits. 101 Hatch Hall.* Professor True.

6. ADVANCED STOCK FEEDING. Lectures and laboratory, laboratory to consist of conducting actual feeding experiments with farm animals. *Second semester. Three credits.* Professor True.

7. ADVANCED STOCK JUDGING. A course to include the judging of animals in classes as at fairs and stock shows. Laboratory twice a week. *Prerequisites:* Animal Husbandry 1 and 4. Professor True.

the special uses of these crops, as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plan for the rotation of soiling crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—The laboratory work will include the examination of samples of the standard varieties of grasses, clovers and other forage plants; the study of grass, clover and alfalfa seeds with reference to quality, purity and freedom from adulterants and weed seeds; the identification of seeds of noxious weeds which may be found in grass, clover or alfalfa seed. *First semester. Hours to be arranged. Five credits.* Assistant Professor Knight.

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Primarily for the Senior Colleges

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XXI. ANIMAL HUSBANDRY

PROFESSOR TRUE

Primarily for the Junior Colleges

1. BREEDS OF LIVE STOCK. A study of the origin, development, characteristics, and uses of the pure breeds of farm animals. For illustration the animals of the University Farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *First semester. Hours to be arranged. Four credits. 101 Hatch Hall.* Professor True.

2. ANIMAL BREEDING. A discussion of the principles underlying the art of breeding, the aim of which is to develop, maintain, and improve the various breeds and types of farm animals and farm crops, studied with special reference to their application to breeding of farm animals. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

3. FEEDING ANIMALS. A study of the principles underlying, and problems connected with, the feeding of farm animals. *Smith:* Profitable Stock Feeding. *First semester. Hours to be arranged. Two credits. 101 Hatch Hall.* Professor True.

Primarily for the Senior Colleges

4. STOCK JUDGING. Practice in judging live stock, the aim of which shall be to make the student familiar with the points of excellence in the various breeds of farm animals. *Craig:* Judging Live Stock. *First semester. Hours to be arranged. Five credits. 101 Hatch Hall.* Professor True.

5. LIVESTOCK REGISTRATION. A course intended to familiarize the student with the details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them, a study of pedigrees, and how to keep herd records. *Second semester. Hours to be arranged. Two credits. 101 Hatch Hall.* Professor True.

6. ADVANCED STOCK FEEDING. Lectures and laboratory, laboratory to consist of conducting actual feeding experiments with farm animals. *Second semester. Three credits.* Professor True.

7. ADVANCED STOCK JUDGING. A course to include the judging of animals in classes as at fairs and stock shows. Laboratory twice a week. *Prerequisites:* Animal Husbandry 1 and 4. Professor True.

XXII. VETERINARY SCIENCE

PROFESSOR MACK

1. VETERINARY SCIENCE. This course is designed to give the student some familiarity with the more common ailments of domesticated animals, and such knowledge of the nature of disease as to enable him to maintain sanitary conditions, and to intelligently combat infection. *Second semester. Hours to be arranged. Daily. 204 Hatch Hall.* Professor Mack.

XXIII. DAIRYING

BUTTER MAKING. Practical butter making, including the use of the hand separator, the ripening of cream, churning, working and the putting up of butter for market, and the use of the Babcock tester. Lectures on the formation and composition of milk; ferments and their action; testing for purity and value; methods of manufacturing butter and cheese.

XXIV. ENTOMOLOGY

PROFESSOR DOTEN

1. ECONOMIC ENTOMOLOGY. Lectures with field work on destructive insect pests. Discussion of their life histories, and the best means of combating them. *First semester. Hours to be arranged. Four credits.* Professor Doten.

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

1*b*. TEXTILES. The history and the hygiene of dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

2*b*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

3*b*. HISTORY OF COOKERY. Food adulterations. Dietetic errors. Invalid cookery. Chafing-dish course. *Both semesters. Hours and credits to be arranged. 1 Stewart Hall.* Assistant Professor Bardenwerper.

XXVI. GEOLOGY

PROFESSOR SMITH

1*c*. ELEMENTARY GEOLOGY. A brief elementary course in Geology. Open to agricultural students only. *Second semester.*

Hours to be arranged. Two credits. (To be taken concurrently with Mineralogy 1c.) *Mackay Mining Building.* Professor Smith.

For description of other courses, see under Geology, College of Engineering.

XXVII. MINERALOGY

ASSISTANT PROFESSOR JONES

1c. ELEMENTARY MINERALOGY AND PETROLOGY. A brief course in the determination of the common minerals and rocks. Open to agricultural students only. (To be taken concurrently with Geology 1c.) *Second semester, 2–4:30, M. One credit. Mackay Mining Building.* Assistant Professor Jones.

For description of other courses, see under Mineralogy, College of Engineering.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND JACOBSON, ASSISTANT PROFESSOR DINSMORE, INSTRUCTOR HARTLEY, AND ASSISTANTS KENNEDY AND ROSS

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Open to students in the Colleges of Liberal Arts, Science and Agriculture, who have not presented matriculation chemistry. *Both semesters. Two credits.* Mr. Hartley.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. 101 Chemistry Building. Two credits.* Professor Adams and Mr. Ross.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students, who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Two credits.* Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Two credits.* Mr. Ross.

9. AGRICULTURAL CHEMISTRY. A lecture course on the application of chemical principles to farm economy. The following topics will be dealt with: Composition of plants, soil and fertilizers; soil fertility and soil toxicity; metabolic changes in animal and plant nutrition; the use of instruments and methods in agricultural analysis. *Two hours per week. Both semesters. Prerequisites:* Chemistry 1 and 2. *Four credits.* Professor Jacobson.

10. AGRICULTURAL ANALYSIS. A laboratory course to accompany Chemistry 9. This course includes the analysis of farm and dairy products, soils, fertilizers, stock foods and irrigation waters. *Both semesters, 2–4:30, T. W. Four credits.* Professor Jacobson and Mr. Kennedy.

XXX. MATHEMATICS

ASSOCIATE PROFESSOR HASEMAN

Primarily for the Junior Colleges

1*a*. ALGEBRA. Special emphasis is placed on the following subjects: Ratio, proportion, variation, progressions, undetermined coefficients, the binomial theorem, logarithms, series, and the theory of equations. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, and the sphere. *Second semester. Six weeks. One credit. 107 Morrill Hall.* Associate Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, 12 weeks. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

For other courses in Mathematics, see College of Arts and Science.

XXXIV. MECHANIC ARTS

MR. GOUGH, MR. CHATFIELD

1. BENCH WORK AND WOOD TURNING. *Both semesters. Hours to be arranged. Two credits. 201 Mechanical Building.* Mr. Gough and Mr. Chatfield.

For description of other courses, see Mechanic Arts, College of Engineering.

XXXV. CIVIL ENGINEERING

PROFESSOR BOARDMAN

1. SURVEYING. The use and adjustments of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room in land surveying, topographic, hydrographic, mining, and city surveying. *First semester only. Recitations or lectures, 1–2. Field or Drafting, 2–4:30, Th. F. Four credits.* Professor Boardman.

RURAL ENGINEERING. A course including road building and maintenance, the construction of irrigation and drainage works for the farm, the construction of farm buildings, the use of

concrete in farm construction, the use of motors, engines, and other farm machinery.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT McCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. F. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Four semesters, 11–12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Four semesters, 11–12, W. One-half credit.* Lieutenant McClure.

XXXVIII. PHYSICAL TRAINING FOR WOMEN

MISS MEIGHAN

PHYSICAL CULTURE. This course is offered to all young women of the University, and required in the Freshman and Sophomore years, as part of the regular work. Two hours of work each week are required of all students taking the course. Upon entering the class all students are carefully examined by a physician, with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies are solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium, make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, with regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

[1] For exceptions, see Organization of Battalion of Cadets, page 44.

COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

COLLEGE OF ENGINEERING

FACULTY

JOSEPH EDWARD STUBBS President
HENRY THURTELL Professor of Mathematics and Mechanics
GEORGE J. YOUNG[1] Professor of Mining and Metallurgy
JAMES GRAVES SCRUGHAM Professor of Mechanical Engineering
LOWE ABEEL MCCLURE Professor of Military Science and Tactics
W. S. TANGIER SMITH Professor of Geology and Mineralogy
MAXWELL ADAMS Professor of Chemistry
HERBERT WYNFORD HILL Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN Professor of Civil Engineering
LEON WILSON HARTMAN Professor of Physics
DWIGHT BRUNEL HUNTLEY Acting Professor of Mining and Metallurgy
CHARLES HASEMAN Associate Professor of Mathematics
KATHERINE LEWERS Assistant Professor of Drawing
JAY ARNOLD CARPENTER Assistant Professor of Metallurgy
J. CLAUDE JONES Assistant Professor of Geology and Mineralogy
ACHILLES CALLOWAY GOUGH Instructor in Mechanical Engineering
GUSTAVUS SWIFT PAINE Instructor in English
NORMAN CHATFIELD Instructor in Mechanical Engineering
SILAS EARL ROSS Assistant in Chemistry

AIM

The aim of the College of Engineering is to equip the young men who wish to share actively in the industrial development of the State and the Nation with such knowledge of mining, mechanical and civil engineering as is essential for entrance into these professions.

EQUIPMENT

In a College of Engineering the material equipment is of great importance and the University has made a special effort to properly provide the necessary laboratories, workshops, etc. For a general description of these see under the titles Mackay Mining Building, Mechanical Building, Chemistry Building, Laboratories for Geology and Mineralogy, Laboratories of the Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

[1]Absent on leave.

CONDITIONS OF ADMISSION

1. Entrance to the Engineering Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work done here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1

For entrance to the Engineering Schools, the candidates must present English a and b; Mathematics a, b, c, d, and e; American History and Civics, 1 unit; Science, 2 units, one of which must be advanced; 6 other units, to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination, on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the department concerned.

THE JUNIOR CERTIFICATE

In the Engineering Schools, the Junior Certificate will be given to those who have satisfied all the entrance requirements; who have fulfilled the requirements of the Junior College in Drill and Physical Culture; and who have secured credit for the first two years' work required in their respective colleges. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

THE BACCALAUREATE DEGREE

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical Engineering, upon students who have satisfactorily com-

pleted the full course of study in the School of Mechanical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

DEGREES OF MINING, MECHANICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer, is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Studies and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COLLEGE OF ENGINEERING

COURSE OF STUDY

FRESHMAN—ALL SCHOOLS

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
English 1		3	English 1		3
Chemistry 3 and 4	2	2	Chemistry 3 and 4	2	2
Mathematics 1b		3	Mathematics 7		3
Drawing 1 and 2	3		Drawing 3	3	
Mechanic Arts 1	2		Mechanic Arts 2	2	
Elective		3	Elective		3
Total		18	Total		18

SCHOOL OF MINES

SOPHOMORE

First Semester			*Second Semester*		
Mineralogy 1a	2		Mineralogy 1b	2	
Chemistry 5	3		Chemistry 6	3	2
Mathematics 8		5	Mathematics 9		3
Physics 2 and 3	1	5	Physics 2 and 3	1	5
Elective		2	Elective		2
Total		18	Total		18

JUNIOR

First Semester			*Second Semester*		
Mining 11 and 12		2	Mining 7		2
Geology 1a		3	Mining 12	2	
Mathematics 10		3	Mathematics 10		3
Mathematics 11		2	Geology 1b		2
Civil Engineering 1		4	Geology 2		2
Elective		4	Geology 2a or 3	1	
			Geology 4a	1	
			Civil Engineering 1		4
			Elective		1
Total		18	Total		18

In the summer vacation, Geology 4b is required of all mining students. The work covers four weeks.

SENIOR

First Semester			*Second Semester*		
Mining 1		4	Mining 2		4
Mining 3	1		Mining 9		4
Mining 8		4	Mining 10	2	
Mining 10	2		Thesis		2
Geology 4c		1	Elective		6
Geology 5a		3			
Elective		3			
Total		18	Total		18

SCHOOL OF MECHANICAL ENGINEERING

SOPHOMORE

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
Mechanical Engineering 1		2	Mechanical Engineering 1		2
Mechanic Arts 3	2		Mechanical Engineering 2		2
Chemistry 5a	1		Mechanic Arts 3	2	
Physics 2	1	5	Physics 2	1	5
Mathematics 8		5	Mathematics 9		3
Elective		2	Drawing 4		2
			Elective		1
Total		18	Total		18

JUNIOR

First Semester			*Second Semester*		
Electrical Engineering 1		3	Mechanical Engineering 1		2
Mathematics 10		3	Mechanical Engineering 3		2
Mathematics 11		2	Electrical Engineering 2		3
Drawing 5	3		Mathematics 10		3
Civil Engineering 1	4		Civil Engineering	4	
Civil Engineering 9		2	Drawing 6	3	
Elective		1	Elective		1
Total		18	Total		18

SENIOR

First Semester			*Second Semester*		
Mechanical Engineering 5		4	Mechanical Engineering 6		2
Mechanical Engineering 10	1	1	Mechanical Engineering 7		1
Electrical Engineering 3		3	Mechanical Engineering 8	1	1
Civil Engineering 8		3	Electrical Engineering 4		2
Drawing 7	3		Electrical Engineering 5		2
Elective		3	Drawing 7		4
			Thesis		2
			Elective		3
Total		18	Total		18

SCHOOL OF CIVIL ENGINEERING

SOPHOMORE

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
Mineralogy 1a		2	Physics 2	1	5
Physics 2	1	5	Mathematics 9		3
Mathematics 8		5	Mechanical Engineering 1		2
Mechanical Engineering 1		2	Drawing 3a	1	
Elective		3	Drawing 4	2	
			Elective		4
Total		18	Total		18

JUNIOR

First Semester		*Second Semester*	
Civil Engineering 1	4	Civil Engineering 1	4
Civil Engineering 9	2	Civil Engineering 6	3
Mathematics 10	3	Civil Engineering 7	3
Mathematics 11	2	Mathematics 10	3
Electrical Engineering 1 or Geology 1a	3	Mathematics 11	2
Elective	4	Elective	3
Total	18	Total	18

SENIOR

First Semester		*Second Semester*	
Civil Engineering 3	5	Civil Engineering 4	5
Civil Engineering 5	3 2	Civil Engineering 10	2
Civil Engineering 8	3	Civil Engineering 11	2
Civil Engineering 13	2	Civil Engineering 13	2
Elective	3	Thesis	2
		Elective	5
Total	18	Total	18

COURSES OF INSTRUCTION

VI. English	XXXII. Mechanical Engineering
XXVI. Geology	XXXIII. Electrical Engineering
XXVII. Mineralogy	XXXIV. Mechanic Arts
XXVIII. Chemistry	XXXV. Civil Engineering
XXIX. Physics	XXXVI. Drawing
XXX. Mathematics	XXXVII. Military Science and Tactics
XXXI. Mining	

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Primarily for the Junior Colleges

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, Section 1, 9–10, Section 2, 10–11, daily. Three credits. 5 Stewart Hall.* Mr. Paine.

For description of other courses, see English, College of Arts and Science.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

For the Junior and Senior Colleges

1*a*. DYNAMIC AND STRUCTURAL GEOLOGY. A general discussion of geological forces and their results. Lectures and recitations. *First semester, 10–11, M. W. F. Mackay Mining Building.* Professor Smith.

1*b*. HISTORICAL GEOLOGY. An outline of the history of the earth, including diastrophic changes, stratigraphic relationships and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *Prerequisite:* Geology 1a. *Second semester, 10–11, M. F. Mackay Mining Building.* Professor Smith.

2. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisites:* Geology 1a, Mineralogy 1a and b, 3. *Second semester, 1–2. Two credits. Mackay Mining Building.* Professor Smith.

2*a*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens. *Prerequisite:* Geology 1a and 2. (The latter should be taken concurrently.) *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

3. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimens, and in thin sections with the microscope. *Prerequisites:* Mineralogy 4 and 5; Geology 1a and 2. (The latter should be taken concurrently.) *Second semester, 1–4, W. One credit. Mackay Mining Building.* Professor Smith.

Primarily for the Senior Colleges

4*a*. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the map-

NOTE—Credits are reckoned on the semester basis. When not otherwise specified, the credits are equivalent to the number of recitations per week.

ping of some area in the vicinity of the University. *Prerequisite:* Geology 1a. *Second semester; hours to be arranged. One credit.*

4*b*. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably a mining camp, where both the surface and underground geology may be investigated. The field for 1909 was in the vicinity of Nevada City, California. A concise report of the work, together with well-kept field notes, a finished geological map and cross sections will be required of each member of the class. *Prerequisites:* Geology 1a and b, 2, and 4a. *Four credits; hours to be arranged.*

4*c*. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspects of the work will be given. *Prerequisite:* Geology 4b. *First semester; hours to be arranged. One credit.* Professor Smith and Assistant Professor Jones.

5*a*. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, non-metallic minerals, and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Geology 1a and b, 2, and either 2a or 3. *First semester. Three credits. Mackay Mining Building.* Professor Smith.

5*b*. ECONOMIC GEOLOGY. An advanced course treating the modes of concurrence, origin and distribution of metalliferous deposits, with a study of the important mining camps of North America. *Prerequisite:* Geology 5a. *Second semester; hours to be arranged. Three credits. Mackay Mining Building.* Professor Smith.

20. UNDERGRADUATE THESIS COURSE. *Second semester; hours to be arranged. Two credits. Mackay Mining Building.* Professor Smith.

21. GRADUATE COURSE. Original investigation of geologic problems with seminar for discussion of current geological literature and special topics. *Credits and hours to be arranged. Mackay Mining Building.* Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Primarily for the Junior Colleges

1*a*. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed

by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisites:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits. Mackay Mining Building.* Assistant Professor Jones.

1*b*. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits. Mackay Mining Building.* Assistant Professor Jones.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Two credits. Mackay Mining Building.* Assistant Professor Jones.

Primarily for the Senior Colleges

2. CRYSTALLOGRAPHY. Lectures, recitations and laboratory practice on the morphology of minerals. *First semester. Lecture 10–11, T. Laboratory, 2–4:30, W. Two credits. Mackay Mining Building.* Professor Smith.

4. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Mineralogy 1a and b, or 2 and 3. *First semester, 1–2, M. T. Two credits. Mackay Mining Building.* Professor Smith.

5. OPTICAL PROPERTIES OF MINERALS. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. *Prerequisite:* Mineralogy 4. (May be taken concurrently.) *First semester, 1–4, F. One credit. Mackay Mining Building.* Professor Smith.

6. GRADUATE COURSE. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Credits and hours to be arranged. Mackay Mining Building.* Professor Smith and Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND DINSMORE, MR. ROSS

Primarily for the Junior Colleges

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Two credits.* Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accom-

pany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Two credits.* Mr. Ross.

5. QUANTITATIVE ANALYSIS. Training in general methods of manipulation will be given in both gravimetric and volumetric analysis. Open to students who have completed Chemistry 3 and 4. *Either semester, 2–4:30. Three credits. 102 Chemistry Building.* Professor Adams.

5*a*. A laboratory course in elementary fuel analysis for mechanical engineers. *First semester, 2–4:30, Th.* Professor Adams and Professor Dinsmore.

6. QUANTITATIVE ANALYSIS. Special determination in analytical chemistry will be assigned to meet the demands of the individual students and the department in which the degree is sought. Open to students who have completed Chemistry 5. *Either semester, 2–4:30. Three credits. 102 Chemistry Building.* Professor Adams.

XXIX. PHYSICS

PROFESSOR HARTMAN

Primarily for the Junior Colleges

1. GENERAL PHYSICS. A course in general physics giving University credit to students entering the University without condition but with a deficiency in this subject. The class-room and laboratory work of this course will include that performed by students in Physics a, with one additional lecture or recitation per week. Plane geometry is a prerequisite. *Both semesters. Hours to be arranged. Three credits.*

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisites:* Mathematics 1b and 7; Physics a or Physics 1. *Both semesters, 9–10, daily. Five credits. 5, 6, and 11 Physics Building.*

3. PHYSICAL MEASUREMENTS. Experimental work in heat and mechanics, sound and light, electricity and magnetism of distinctly quantitative character is done. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisites:* Mathematics 1b and 7; Physics 1. *Both semesters, 2–4:30, W. Th. One credit. 5 Physics Building.* Professor Hartman and Mr.

Primarily for the Senior Colleges

5. ELECTRICAL MEASUREMENTS. Precise measurement of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisites:* Physics 1, 2, and 3. *Second semester, 2–4:30, T. W. One or two credits.* Professor Hartman and Mr.

20. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* Professor Hartman.

XXX. MATHEMATICS

ASSOCIATE PROFESSOR HASEMAN

Primarily for the Junior Colleges

1*b*. ALGEBRA. This course covers progressions, the binomial theorem, permutations and combinations, the theory of equations, and the theory and application of determinants. *First semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

2*b*. SOLID GEOMETRY. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. *First semester. Four weeks, 8–9, daily. One credit. 107 Morrill Hall.* Associate Professor Haseman.

3*b*. PLANE TRIGONOMETRY. Prominence is given to the relation of functions, transformation of trigonometric expressions, the derivation of formulas, and the solution of triangles. *First semester. Six weeks, 8–9, daily. Two credits. 107 Morrill Hall.* Associate Professor Haseman.

7. ANALYTIC GEOMETRY. A study of the point, the straight line, transformation of coordinates, conic sections and the general equation of the second degree. A short time will be devoted to analytic geometry of the dimensions. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminate forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester. Five credits. 107 Morrill Hall.* Associate Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to the

methods of integration. This is followed by the application of integration to areas of plane curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester. Three credits. 107 Morrill Hall.* Associate Professor Haseman.

Primarily for the Senior Colleges

10. ANALYTIC MECHANICS. Work in the resolution of forces, center of gravity, moment of inertia, laws of motion, friction and dynamics of machinery. Emphasis is placed on practical numerical examples to illustrate the theory. *Both semesters. Three credits each semester. 107 Morrill Hall.* Associate Professor Haseman.

11. MECHANICS OF MATERIALS. Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *Both semesters. Two credits each semester. 107 Morrill Hall.* Associate Professor Haseman.

For other courses in Mathematics, see College of Arts and Science.

XXXI. MINING AND METALLURGY

PROFESSOR YOUNG,[1] ACTING PROFESSOR HUNTLEY, AND ASSISTANT PROFESSOR CARPENTER

Primarily for the Senior Colleges

1. MINING (General). Excavation, explosives, tunneling, boring, shaft-sinking. *First semester. Lecture Room, Mackay Mining Building.* Professor Young[1] and Acting Professor Huntley.

2. MINING (General). Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, mine equipment and management, mining law. *Second semester. Lecture Room, Mackay Mining Building.* Professor Young[1] and Acting Professor Huntley.

3*a*. MINING (Laboratory). Problems in engineering and in the design of mining and metallurgical machinery; review and discussion of technical journals and books. *First semester. One credit. Lecture Room, Mackay Mining Building.* Professor Young,[1] Acting Professor Huntley, and Assistant Professor Carpenter.

3*b*. MINING (Laboratory). Continuation of Mining 3*a*. *Second semester. One credit. Lecture Room, Mackay Mining Building.* Professor Young,[1] Acting Professor Huntley, and Assistant Professor Carpenter.

4. MINING (Laboratory). The work in this course consists of practice in sharpening and tempering hand and machine drills, in the use of these, and in forging and welding. *First semester. Two credits. Mining Laboratory and Forge Shop.* Professor Young[1] and Acting Professor Huntley.

5. EXCURSIONS. During the year two trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit. The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formation is also done in order to facilitate interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide, and reduction plants. Reports of observations, with sketches, are required of each student. (For Seniors, School of Mines.) Professor Young[1] and Acting Professor Huntley.

6. ENGINEERING CONTRACTS AND SPECIFICATIONS. *Second semester. Lecture room. Mackay Mining Building.* Professor Young[1] and Acting Professor Huntley.

7*a*. METALLURGY (General). Lectures and recitations. Physical properties of the more important metals and alloys; physical properties of the structural metals and alloy steels; the metallographical structure of steels. *Prerequisites:* Chemistry 1, 2, 3; Mineralogy 1. *Second semester. Lecture Room, Mackay Mining Building.* Professor Young[1] and Assistant Professor Carpenter.

7*b*. METALLURGY (General). Lectures and recitations. Metallurgy of iron and steel, fuels, heat measurements, metallurgical furnaces, processes, and products; crushing and sampling of ores. *Prerequisites:* Chemistry 1, 2, 3; Mineralogy 1. *Second semester. Lecture Room, Mackay Mining Building.* Professor Young[1] and Assistant Professor Carpenter.

8. METALLURGY (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 7. *First semester, 10–11, M. T. Th. F. Lecture Room, Mackay Mining Building.* Professor Young.[1]

9. METALLURGY (Copper, Lead, Zinc.). Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management and economic conditions. *Pre-*

[1]Absent on leave.

requisite: Metallurgy 7. *Second semester, 10–11, M. T. Th. F. Lecture Room, Mackay Mining Building.* Professor Young.[1]

10. METALLURGY (Laboratory). A series of experiments is given which is designed to supplement, in part, the class-room work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to supplement the small-scale experiments. *Prerequisites:* Metallurgy 7; Chemistry 5 and 6. *First semester, 2–4:30, W. Th. Second semester, 2–4:30, Th. F. Two credits. Metallurgical Laboratory, Mackay Mining Building.* Professor Young.[1]

11*a*. ASSAYING. Lectures and recitations. Methods of assaying, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying. *Prerequisites:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. Lecture Room, Mackay Mining Building.* Assistant Professor Carpenter.

11*b*. ASSAYING. Lectures and recitations. Chemistry in assay slags and slag calculation. Full discussion of the assay of difficult ores and metallurgical products, the fire assay of lead, platinum, bismuth, tin, and mercury, the errors and losses in the fire assay. *Lecture Room, Mackay Mining Building.* Assistant Professor Carpenter.

12. ASSAYING. (Laboratory). Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miner's pan, horn, and batea. *Prerequisites:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. One credit. Assaying Laboratory, Mackay Mining Building. Second semester. Two credits. Assaying Laboratory, Mackay Mining Building.* Assistant Professor Carpenter.

13. FIRST-AID AND HYGIENE. A course of four lectures in second semester of Senior year. Required of all regular Senior mining students. *Hours to be arranged.* Professor Frandsen.[1]

14. MINING LAW. A course of four lectures in second semester of Senior year. *Special lectures; hours to be arranged.*

15. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work must cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations and to put at least one whole vacation period into practical work.

20. THESIS. Each Senior student is required to hand in a

[1]Absent on leave.

thesis on some subject in mining or metallurgy or related branch of engineering. *Second semester; hours to be arranged. Two credits.* Professor Young.[1]

XXXII. MECHANICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. GOUGH

Primarily for the Senior Colleges

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers. *Both semesters, 9–10, T. Th. 1 Mechanical Building. Two credits.* Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, and the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits. 1 Mechanical Building.* Mr. Gough.

3. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *Second semester, 9–10, M. F. 1 Mechanical Building. Two credits.* Mr. Gough.

4. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horsepowers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 10–11, M. T. 1 Mechanical Building. Two credits.* Professor Scrugham.

5. STEAM ENGINE. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10, M. T. Th. F. 1 Mechanical Building. Four credits.* Mr. Gough.

6. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases

[1] Absent on leave.

and oil is discussed, and comparative costs and efficiencies considered. *Second semester, 9–10, M.W. F. 1 Mechanical Building. Two credits.* Professor Scrugham.

7. POWER PLANTS. The mechanical engineering of power plants is here presented in a non-mathematical way, and the machinery appliances and economical auxiliaries employed have their practical and experimental side shown. *Second semester, 1–2, W. 1 Mechanical Building. One credit.* Professor Scrugham.

8. VALVE GEARING. A study of the various forms of engine valves, link motions, radial gears, and shaft regulation. Each student must design some form of standard engine-valve and governor, the data being taken from trade catalogues and engines actually in use. *Second semester, 1–4:30, Th. Two credits. 1 Mechanical Building.* Mr. Gough.

10. ENGINEERING LABORATORY PRACTICE. This course covers the various methods of conducting and working up tests, determining efficiencies, driving powers, etc., and is supplemented by practical tests on a number of pieces of apparatus. *First semester, 1–4:30, F. 1 Mechanical Building. Two credits.* Professor Scrugham.

11. FIELD TESTS. This course consists of an extended series of experimental tests on power plants, locomotives, train-lighting systems, etc. *Elective. Three credits. Hours to be arranged.* Professor Scrugham.

19. INSPECTION VISITS. The most important engineering establishments in the vicinity are visited in order that the student may make a study of modern structures and methods in manufacture. *Open to Juniors and Seniors, School of Mechanical Engineering.* Professor Scrugham.

20. THESIS COURSE. The designing of a machine or the original investigation of some subject congenial to the student's taste and included in the scope of the curriculum. *Second semester. Hours to be arranged. Two credits.* Professor Scrugham.

XXXIII. ELECTRICAL ENGINEERING

PROFESSOR SCRUGHAM

Primarily for the Senior Colleges

1. DIRECT-CURRENT MACHINERY. Fundamental principles, theory, characteristics, operation, and construction of dynamos, motors, storage batteries, etc. *Prerequisite:* Physics 2. *First*

semester, 10–11, M. W. F. Three credits. 1 Mechanical Building. Professor Scrugham.

2. ELECTRIC LIGHTING, WIRING, AND DISTRIBUTION. *Prerequisite:* E. E. 1. *Second semester, 10–11, W. Th. F. 1 Mechanical Building.* Professor Scrugham.

3. ALTERNATING-CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* E. E. 1. *First semester, 1–2, W. Th. F. 1 Mechanical Building.* Professor Scrugham.

4. APPLIED ELECTRICITY. Application of electricity to machine tools, pumps, hoists, cranes, railways, etc. *Second semester, 1–2, M. T. 1 Mechanical Building.* Professor Scrugham.

5. ELECTRIC LABORATORY. The use and care of electrical instruments. Tests of generators, motors, transformers, etc. *Second semester, 2–4:30, M. T. F. Two credits. 1 Mechanical Building.* Professor Scrugham.

XXXIV. MECHANIC ARTS

MR. GOUGH, MR. CHATFIELD

Primarily for the Junior Colleges

1. WOOD WORK. The students are taught the use of hand and machine tools and the most approved processes and methods followed in engineering construction. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenter's tools. The wood-turning involves the various principles of lathe work in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. *Both semesters, 2–4:30, M. T. Two credits. 1 Mechanical Building.* Mr. Gough and Mr. Chatfield.

2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case hardening, and the making of a complete set of machine cutting-tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, M. T.; Section 2, 8–12, Sat. Two credits. 1 Mechanical Building.* Mr. Gough.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface chipping, squaring and fitting, round filing, sawing, scraping and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work, and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, M. T. Two credits. 102 Mechanical Building.* Mr. Gough.

XXXV. CIVIL ENGINEERING

PROFESSOR BOARDMAN

Primarily for the Junior Colleges

1. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in class room, field, and drafting room in land surveying, topography, hydrography, mining, and city surveying. *Both semesters. For all engineering students. Recitations or Lectures, 1–2, Field or Drafting, 2–4:30, Th. F. Four credits.* Professor Boardman.

Primarily for the Senior Colleges

3. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester, 10–11, daily.* Professor Boardman.

4. STRUCTURAL DESIGN. General features and details of design, estimates of weight and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester, 9–11, daily.* Professor Boardman.

5. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester, 1–2, M. T., 9–10, W. Field or Drafting, 2–4:30, M. T. Five credits.* Professor Boardman.

6. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester, 10–11, T. W. Th.* Professor Boardman.

semester, 10–11, M. W. F. Three credits. 1 Mechanical Building. Professor Scrugham.

2. ELECTRIC LIGHTING, WIRING, AND DISTRIBUTION. *Prerequisite:* E. E. 1. *Second semester, 10–11, W. Th. F. 1 Mechanical Building.* Professor Scrugham.

3. ALTERNATING-CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* E. E. 1. *First semester, 1–2, W. Th. F. 1 Mechanical Building.* Professor Scrugham.

4. APPLIED ELECTRICITY. Application of electricity to machine tools, pumps, hoists, cranes, railways, etc. *Second semester, 1–2, M. T. 1 Mechanical Building.* Professor Scrugham.

5. ELECTRIC LABORATORY. The use and care of electrical instruments. Tests of generators, motors, transformers, etc. *Second semester, 2–4:30, M. T. F. Two credits. 1 Mechanical Building.* Professor Scrugham.

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Primarily for the Junior Colleges

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2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case hardening, and the making of a complete set of machine cutting-tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, M. T.; Section 2, 8–12, Sat. Two credits. 1 Mechanical Building.* Mr. Gough.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface chipping, squaring and fitting, round filing, sawing, scraping and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work, and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, M. T. Two credits. 102 Mechanical Building.* Mr. Gough.

XXXV. CIVIL ENGINEERING

PROFESSOR BOARDMAN

Primarily for the Junior Colleges

1. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in class room, field, and drafting room in land surveying, topography, hydrography, mining, and city surveying. *Both semesters. For all engineering students. Recitations or Lectures, 1–2, Field or Drafting, 2–4:30, Th. F. Four credits.* Professor Boardman.

Primarily for the Senior Colleges

3. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester, 10–11, daily.* Professor Boardman.

4. STRUCTURAL DESIGN. General features and details of design, estimates of weight and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester, 9–11, daily.* Professor Boardman.

5. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester, 1–2, M. T., 9–10, W. Field or Drafting, 2–4:30, M. T. Five credits.* Professor Boardman.

6. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester, 10–11, T. W. Th.* Professor Boardman.

7. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and estimates its cost. *Second semester, 2–4:30, M. T. Three credits.* Professor Boardman.

7*a*. MASONRY CONSTRUCTION. Additional work, drafting or laboratory testing. *One to three credits, to depend on time put in and work done.* Professor Boardman.

8. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water and the laws of its flow through openings and in channels of various kinds. *First semester, 8–9, T. W. Th.* Professor Boardman.

9. GRAPHIC STATICS. A study of the principles of graphic statics and their application in ascertaining the stresses in framed structures. *First semester, 8–10, M. F.* Professor Boardman.

9*a*. GRAPHIC STATICS. Additional work in graphics of bridge trusses. *One to three credits, to depend on time put in and work done.* Professor Boardman.

10. WATER SUPPLY. A study of public water supplies. Sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester, 8–9, T. W.* Professor Boardman.

11. IRRIGATION ENGINEERING. A thorough study of the questions involved in the collection, storage, and distribution of water for irrigation purposes. *Second semester, 8–9, Th. F.* Professsor Boardman.

12. MINE SURVEYING. At the close of the college year the Junior Class in Surveying takes a four weeks' trip to Virginia City. Here one of the mines is surveyed and mine maps constructed. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. Professor Boardman.

13. REINFORCED CONCRETE. Its principles and applications. *First semester. Recitations and Lectures. Two credits. Second semester.* DESIGN. *Two credits. Hours to be arranged for each semester.* Professor Boardman.

14. WATER-POWER ENGINEERING. A study of the more important problems of water-power development from the civil engineering point of view. *Three credits.* Professor Boardman.

XXXVI. DRAWING

PROFESSOR SCRUGHAM, ASSISTANT PROFESSOR LEWERS, MR. GOUGH

Primarily for the Junior Colleges

1. FREEHAND DRAWING. Perspective sketches of machines. Sketches of projections of machines. *First semester, 2–4:30, F. One credit.* Assistant Professor Lewers.

2. MECHANICAL DRAWING. Plates, lettering, machine parts, etc. *Second semester. Section 1, 9–10, Section 2, 10–11, daily. Two credits.* Assistant Professor Lewers.

3. ELEMENTARY MACHINE DESIGN. Drawing and design of machine parts, modern shop arrangement, etc. *Second semester, 9–10, daily. Three credits. 9 Morrill Hall.* Mr. Gough.

3*a*. TOPOGRAPHICAL DRAWING AND MAPPING. *Second semester. One credit.* Professor Boardman.

4. DESCRIPTIVE GEOMETRY. *Second semester, 8–9, daily. Two credits. 9 Morrill Hall.* Mr. Gough.

Primarily for the Senior Colleges

5. MACHINE DESIGN. *First semester, 2–4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.

6. STEAM-BOILER DESIGN. *Second semester, 2–4:30, M. T. W. Three credits. 1 Mechanical Building.* Professor Scrugham.

7. ADVANCED MACHINE DESIGN. *First semester, 2–4:30, W. Th. F. Second semester, 2–4:30. Four credits. 1 Mechanical Building.* Professor Scrugham.

XXXVII. MILITARY SCIENCE AND TACTICS

LIEUTENANT MCCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. Th. F. One credit.* Lieutenant McClure.

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Four semesters, 11–12, W. One credit.* Cadet Officers.

3. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Four semesters, 11–12, W. One-half credit.* Lieutenant McClure.

[1] For exceptions, see Organization of Battalion of Cadets, page 44.

THE STATE NORMAL SCHOOL

THE STATE NORMAL SCHOOL

FACULTY

JOSEPH EDWARD STUBBS.....President
PETER FRANDSEN[1].....Professor of Biology
ROMANZO ADAMS.....Professor of Education
ALBERT W. C. T. HERRE.....Acting Professor of Biology
KATHERINE LEWERS.....Assistant Professor of Drawing
GEORGE ORDAHL.....Assistant Professor of Psychology and Education
KATE CONGDON WOOD.....Instructor in Vocal Music
GUSTAVUS SWIFT PAINE.....Instructor in English
ELIZA HENRIETTA OVERMAN.....Assistant in Biology
HELEN ANN MEIGHAN.....Instructor in Physical Culture

FOUNDATION

The Legislature shall have power to establish normal schools, and such different grades of schools from the primary department to the university as in their discretion they may deem necessary. *State Constitution, Article XI, Section 5.*

In accordance with the Constitution of the State, the Legislature has made provision for a normal school as a coordinate department of the University.

In the State of Nevada the high school is an integral part of the public-school system, which includes the primary, grammar, and high schools.

The State Normal School offers courses of instruction, both professional and liberal, for students who wish to become teachers in the public schools of Nevada.

The State Normal School is organized to provide for the professional training of teachers. As a coordinate department of the University of Nevada it is possessed of the advantages offered by the well-equipped laboratories and the library of the University.

AIMS

The purposes of the State Normal School in providing instruction in education are as follows:

To educate students for positions in the public schools.

To promote the study of educational science.

[1]Absent on leave.

To teach the history of education and of educational systems and doctrines.

To secure to teaching the rights and advantages of a profession.

To give unity to our State educational system.

PRACTICE TEACHING

Opportunities for observation and practice are afforded by the Reno public schools. The work is under the supervision of the Department of Education.

COURSES OF STUDY

Two courses of study are offered in the Normal School: (1) The Advanced Course, and (2) the Elementary Course.

The Advanced Course is identical with the Liberal Arts of the General Science Course in the College of Arts and Science, except that during the Junior and Senior years it includes certain courses in Education and Psychology. Students graduating from this course are entitled to a State teacher's certificate of high-school grade. For information, see pages 64 and 65 of this Register.

ELEMENTARY COURSE

CONDITIONS OF ADMISSION

1. Entrance to the Normal School will be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. Candidates for admission who are not graduates of accredited schools must present themselves for examination in the common-school subjects, and in such high-school subjects as they may wish credit for.

3. Any school of the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

4. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

5. All students entering the Normal School must pass an examination in English composition, whether from an accredited school or not.

6. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

SUBJECTS AND CREDITS

1.	English (a, b, and c)	3 units[1]
2.	Mathematics (a, b, and c)	3 units
3.	Physics	1 unit
4.	History (a, b, and c)	2 units
5, 7, 8.	Latin, French, or German (a and b)	2 units
	Elective	1 unit

The elective units may be selected from the subjects listed below:

5, 7, 8.	Latin, French, or German	1 unit
11.	Physical Geography	½ unit
12.	Botany	½ or 1 unit
13.	Zoology	1 unit
14.	Physiology	1 unit
15.	Bookkeeping	½ unit

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

GRADUATION

For graduation from the Nevada State Normal School an attendance of at least one year and the completion of the course of study is required. Credit is given for work done in other institutions of similar rank and character.

[1]A unit, as the measure of the amount of high-school work done, is represented by five recitations a week throughout the year, each recitation being not less than forty minutes' duration.

COURSE OF STUDY

FIRST YEAR

Subjects and Credits Required	*1st Sem.*	*2d Sem.*
Education 21	2	2
Hygiene 1	3	3
English 1	3	3
History 1	3	3
Elective 1	4	4
Total	15	15

SECOND YEAR

Psychology 1 and 2	3	3
Education 23	2	
Psychology 3		2
Education 22	5	5
Elective	5	5
Total	15	15

Students preferring to do primary work should elect music and drawing. Other elections may be made from the courses described in the College of Arts and Science. All elections must be approved by the department in which the work is given and by the Department of Education.

COURSES OF INSTRUCTION

VI. English
VII. Music
VIII. Art
XII. Sociology
XIII. Education
XIV. Psychology
XV. Zoology
XVI. Hygiene
XVII. Botany
XXXVIII. Physical Culture

VI. ENGLISH LANGUAGE AND LITERATURE

MR. PAINE

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters; hours to be arranged. Three credits. Stewart Hall.* Mr. Paine.

VII. MUSIC

MRS. WOOD

1. NOTATION AND SIGHT SINGING. The elements of vocal music, one period each week being given to choral practice with the University Chorus. *Both semesters; hours to be arranged.* Mrs. Wood.

2. METHODS OF TEACHING. The teaching of public-school music, together with a brief course of musical history. *Senior year. Both semesters, 2–3, T. Th. Morrill Hall.* Mrs. Wood.

VIII. ART

ASSISTANT PROFESSOR LEWERS

5a. TEACHERS' COURSE. Attention is given to the observation, the delineation, and color of forms in nature, to ornamental design, to the conventionalizing of plant forms, and to harmony of color. *Both semesters; hours to be arranged. One credit. Physics Building.* Miss Lewers.

XII. SOCIOLOGY

PROFESSOR ADAMS

1. INTRODUCTION TO THE STUDY OF SOCIETY. The purpose of this course is to present the social process as a unity. The demand is not so much for detailed knowledge as for a correct point of view. Society is regarded as organic and evolutionary. The fundamental social institutions and their functions are studied, and their development through savagery, barbarism, and civilization is considered. *First semester; hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

2. SOCIAL PROBLEMS. The aim of this course is to present a number of present-day problems from the point of view of Course 1. Among the problems are the labor problem, socialism, race problems, problems of the city, problems of rural communities, crime, pauperism. Not all of these subjects will receive attention during any one semester, but the course will include one or more of them selected according to the interest of the class. *Prerequisite:* Course 1. *Second semester; hours to be arranged. Three credits. 101 Stewart Hall.* Professor Adams.

XIII. EDUCATION

PROFESSOR ADAMS, ASSISTANT PROFESSOR ORDAHL

21. SCIENCE OF EDUCATION. This is an introductory course to the general field of education. The purpose is to develop a mental attitude of sane inquiry and to gain a fair perspective of education as a whole. Some of the more elementary problems of life are considered at first hand, in relation to present school and social systems. Problems will be discovered and formulated for treatment in following courses. *First and second semesters; hours to be arranged. Four credits.* Assistant Professor Ordahl.

22. PRACTICE. Observation and practice in the Reno public

schools. The student teaches at least four of the more important subjects, such as reading, arithmetic, geography, and history. In preparing for this work the student is required to make a considerable study of each subject, the purpose being two-fold: First, more accurate and broader scholarship and more skill in the school arts; and, second, a clear understanding of the aims involved in the teaching of the subject and a knowledge of the method best designed to secure the desired results. *Both semesters; hours to be arranged. Five credits. Orvis Ring Building.* Professors Adams and Ordahl.

23. EDUCATIONAL PROBLEMS. The purpose of this course is to orient the student with reference to a number of educational problems. The problems are approached from the historical point of view. *First semester, 8–9, T. Th. 101 Stewart Hall.* Professor Adams.

XIV. PSYCHOLOGY

ASSISTANT PROFESSOR ORDAHL

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes and the emotional life. *First semester, 8–9, M. W. F. Three credits.*

2. COMPARATIVE PSYCHOLOGY. The parallels between animal and human behavior are traced, learning process is analyzed, and the fundamental animal and human instincts are considered in relation to individual and racial development. *Second semester, 8–9, M. W. F. Three credits.*

3. CHILD AND ADOLESCENT PSYCHOLOGY. Development of the nervous system and growth of the body are traced in connection with mental development. Types of child and adolescent mind are considered in the problems of social adjustment. Intellectual and emotional difficulties peculiar to child and youth are treated in their relation to clear thinking and moral efficiency. *Second semester, T. Th. Two credits.*

XV. ZOOLOGY

PROFESSOR FRANDSEN,[1] ACTING PROFESSOR HERRE, MISS OVERMAN

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. 101 Stewart Hall. Laboratory, 2–4:40, M. W. Four credits. 202 Hatch Hall.* Professor Frandsen,[1] Acting Professor Herre, and Miss Overman.

[1] Absent on leave.

XVI. HYGIENE

PROFESSOR FRANDSEN,[1] ACTING PROFESSOR HERRE, MISS OVERMAN

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, T. F. Four credits. 101 Stewart Hall.* Professor Frandsen,[1] Acting Professor Herre, and Miss Overman.

XVII. BOTANY

PROFESSOR FRANDSEN,[1] ACTING PROFESSOR HERRE, MISS OVERMAN

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W. 101 Stewart Hall. Laboratory, 2–4:30, M. W. Four credits. 301 Hatch Hall.* Professor Frandsen,[1] Acting Professor Herre, and Miss Overman.

XXXVIII. PHYSICAL TRAINING FOR WOMEN

MISS MEIGHAN

PHYSICAL CULTURE. This course is offered to all young women of the University, and is required in the Freshman and Sophomore years, as part of the regular work. Two hours a week are required of all students taking the course. Upon entering the class all students are carefully examined by a physician, with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies are solicited. Physical measurements are taken in the fall and again in the spring. The aim of the course is to develop a strong and symmetrical physique, with an easy and graceful poise of the body. Systematic exercise, with the aid of a well-equipped gymnasium, makes it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, with regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

[1]Absent on leave.

SPECIAL COURSES

Special courses in music, drawing and physical culture will be given for students who wish to prepare for such special work. Only persons who have natural aptitude for such work, and who have had some training along these lines, will be permitted to undertake special courses. Anyone desiring this work should communicate with the Department of Education in advance.

*

ROSTER OF STUDENTS

September, 1909—March, 1910

GRADUATES

Diplomas and Degrees were awarded on Commencement Day, June 9, 1909, as follows:

Bachelor of Arts

Georgia Alice MacNair
Effie Mona Mack
Mary Gertrude O'Neill
Ihei Owaku
Mabel Lucy Reed
May Marcella Schuler
Dorothy Elizabeth Singer
Reba Oliver Snare
Blanche Nevada Young

Bachelor of Science

Isabel Millar

Bachelor of Science in Mining Engineering

Jules Raymond Gignoux
Charles Daniel Roeder
Silas Earl Ross
Homer Lloyd Williams
Robert Wilburn Young

Bachelor of Science in Mechanical Engineering

Winfield Scott Lake
Stanley Gustavus Palmer

Normal School Diploma

Advanced Course

Georgia Alice MacNair
Mary Gertrude O'Neill
Mabel Lucy Reed
May Marcella Schuler
Dorothy Elizabeth Singer
Reba Oliver Snare
Blanche Nevada Young

Elementary Course

Irene Veronica Brown
Maude Elva Conway
Lillian Adeline Davey
Frances Irene Dake
Astrid Cecilia Erixon
Clara Alicia Flannery
Mabel Estelle Harrison
Josephine Anna Hellwinkel
Emma Caroline Henningsen
Maren Kirstine Jensen
Marea Josephine Kelly
Mattie Belle Nesbitt
Katherine Florence O'Hara
Anna Pauline Pion
Mary Agnes Ramsey

ROSTER OF STUDENTS

GRADUATES

Kennedy, Miles Bryce	General Science	London, England
Overman, Eliza Henrietta	General Science	Elko
Ross, Silas Earl	General Science	Reno
Singer, Dorothy Elizabeth	Liberal Arts	Goldfield

SENIORS

Alexander, Wallace DuBois	Agriculture	Tonopah
Bell, Forrest Francis	Mines	Winnemucca
Bennett, Clayton Alfred	Mines	Nevada City, Cal.
Bird, Donald Miller	Mechanical Engineering	Reno
Brown, Mildred Inez	Liberal Arts	Reno
Brown, Charles LeRoy	General Science	Reno
Colyer, Lydia	Liberal Arts	Reno
Conkey, Irene Maude	Liberal Arts	Coalinga, Cal.
Curnow, George	Mechanical Engineering	Reno
Foss, Marion Henry	Mines	Waterville, N. H.
Fulton, Helen	Liberal Arts	Reno
Goldsworthy, William Henry	Mines	Gold Hill
Hurley, Lulu Bell	Liberal Arts	Reno
Heise, Henry Claud	Mines	Gardnerville
Homer, Dudley Dennison	Mines	Somersville, Mass.
Larcombe, Hazel Pearl	Liberal Arts	Reno
McKenzie, Clyde Stuart	Mines	San Francisco
Mack, Irene Myrtle	Liberal Arts	Reno
Mack, Ernest Deal	Mechanical Engineering	Reno
Mack, Margaret Elizabeth	General Science	Dayton
Miller, John Archibald	Civil Engineering	Gardnerville
O'Brien, Alice Woodward	Liberal Arts	Sparks
Ohmert, Audrey Winifred	Liberal Arts	Reno
Parker, Frances Dorothy	Liberal Arts	Ely
Rossi, Nicholas Louis	Civil Engineering	Johnsville, Cal.
Sears, John Ernest	Civil Engineering	San José, Cal.
Sawin, Maude Amanda	Liberal Arts	Reno
Wagoner, Louisa Catherine	Liberal Arts	Seattle, Wash.
Yamauchi, George	Liberal Arts	Nagasaki, Japan

JUNIORS

Bennett, Ellsworth R.	Mines	Nevada City, Cal.
Bray, Florence Leslie	Liberal Arts	Reno
Cafferata, Frederick James	Mechanical Engineering	Reno
Cleator, Cora	Liberal Arts	Reno
Creel, Cecil Willis	Agriculture	Wadsworth

Folsom, Ernest Gilman	Mechanical Engineering	Reno
Hanser, Hugo E.	Civil Engineering	New York City
Harris, Walter Cameron	Mines	Reno
Hasch, Vera Ellen	Liberal Arts	Reno
Henderson, Virgil M.	Mines	Chico, Cal.
Hobbins, Frank	Mines	Reno
Jepson, Melvin Edward	Mechanical Engineering	Verdi
Layman, Randall Brooks	Mechanical Engineering	Reno
Leavitt, Louis Selwyn	Mechanical Engineering	Santa Cruz, Cal.
Linton, William Donald	Mechanical Engineering	Reno
Mead, Agnes Claire	Liberal Arts	Reno
Myers, Alfred	Mines	Berkeley, Cal.
Payne, Harvey M.	Mines	Reno
Pike, Gertrude	Liberal Arts	Reno
Spark, Clinton Walter	Mines	Tonopah
Teel, Claude	Mines	Bishop, Cal.
White, Harriet Howell	Liberal Arts	Reno
Wilton, Stanley Mayhew	Liberal Arts	Goldfield

SOPHOMORES

Beebe, Cedric Harding	Liberal Arts	Reno
Barber, Elda Marion	Liberal Arts	Reno
Bruce, Daniel Eldred	Mines	Reno
Curler, Augusta Rhoda	General Science	Reno
Fletcher, Harold Augustus	General Science	Reno
Glass, Rowena Ethel	Liberal Arts	Reno
Griscom, William S., Jr.	Mines	Chattanooga, Tenn.
Hanson, Henry Scott	Mechanical Engineering	Reno
Harris, Arthur Ringland	General Science	Reno
Hobbins, Helen Ruthven	Liberal Arts	Reno
Holmes, August	Mines	Battle Creek, Mich.
Lenahan, Mabel	Liberal Arts	Reno
Ogden, Chester Muir	Mechanical Engineering	Nevada City, Cal.
Ohmert, Hazel Mary	Liberal Arts	Reno
Pearson, Edgar Ford	Mechanical Engineering	Reno
Reed, Florence Nightingale	Liberal Arts	Edgemont
Seaton, Roland Moore	Mines	Santa Rosa, Cal.
Selby, Lisle James	Mechanical Engineering	Monterey, Cal.
Smither, Thomas McCourt	General Science	Reno
Spencer, Raymond	Mechanical Engineering	Concord, Cal.
Thompson, Ethel Ray	Liberal Arts	Reno
Tibbals, Carl Lampe	Civil Engineering	Reno
Winter, Bessie Marguerite	Liberal Arts	Whiterock
Wright, Farnsworth	General Science	Reno

FRESHMEN

Boston, Ethel Mae	Liberal Arts	Silver City
Bray, Mildred Nevada	General Science	Reno
Brennen, Frank James	Liberal Arts	Blaine

Cagwin, Eunice Adelaide	Liberal Arts	Sparks
Campbell, Erroll Preston	Civil Engineering	Modesto, Cal.
Catlin, Gladys Jennie	Liberal Arts	Lone Mountain
Clayton, John Lucien	Agriculture	Berkeley, Cal.
Daly, William	Civil Engineering	Hollister, Cal.
Davey, Lillian	General Science	Grass Valley, Cal.
Donohue, Millie	Liberal Arts	Bodie, Cal.
Dorn, Norman Lester	Mechanical Engineering	Corning, Cal.
Finney, Lynn Kelso	Mechanical Engineering	Modesto, Cal.
Frisch, Emma Elizabeth	General Science	Reno
Gignoux, Frank C.	Mechanical Engineering	Reno
Gilcrease, Leonard L.	Mines	Lemoore, Cal.
Goldsworthy, James G.	Mines	Gold Hill
Grubb, Marion D.	Civil Engineering	Hollister, Cal.
Hamilton, Claude	Mechanical Engineering	Silver City
Hauck, Fred Bryant	Civil Engineering	Norwood, Ohio
Hauss, Lena	Liberal Arts	Yuba City, Cal.
Helphinstine, Charles W.	Mines	Chico, Cal.
Heward, Harlan Lester	Liberal Arts	Reno
Higgins, Helen Brelsford	Liberal Arts	Reno
Hilton, Charles R.	General Science	Modesto, Cal.
Jepsen, Mathilda	Liberal Arts	Gardnerville
Jones, Bertha Rachel	Liberal Arts	Sweetwater
Knemeyer, Edward	Mechanical Engineering	Yerington
Langwith, Margaret Angela	Liberal Arts	Golconda
Layman, Harold Lester	Civil Engineering	Reno
Lewis, Leola	Liberal Arts	Reno
Linton, Bessie Caroline	General Science	Reno
Menke, Benjamin Harrison	Mechanical Engineering	Kahoka, Mo.
Mitamura, Matakichi	General Science	Hiroshima, Japan
Mason, Arthur Steele	Mines	Edna, Cal.
Menardi, John Blair, Jr.	Mines	Reno
Milentz, Carl Albert	Mines	St. Louis, Mo.
Orr, Elda Ann	General Science	Reno
Patrick, Lloyd Brown	Agriculture	Reno
Pruett, Dale B.	Mines	Reno
Rowe, John Albert	Mines	Santa Barbara, Cal.
Rowlands, Irene	General Science	Sparks
Ross, Vera May	General Science	Reno
Settlemeyer, William Herman	Civil Engineering	Gardnerville
Schuler, Isabelle Cyrilla	General Science	Reno
Smith, Wilhelmina L.	Liberal Arts	Bodie, Cal.
Tyler, Gilbert Martin	Mines	Palo Alto, Cal.
Warren, Erma Belle	General Science	Reno
Wallace, William Seward	General Science	New York City
White, Florence	Liberal Arts	Reno
Winter, Edith Emelyn	Liberal Arts	Whiterock
Williams, Thomas Grover	Civil Engineering	Wetmore, Kan.

Williams, Cecil L.	Mines	Reno
Wilson, Joseph Willis	Agriculture	Nordyke
Wilson, Nathaniel	Mechanical Engineering	Reno

THE NORMAL SCHOOL

Bates, Edna Viola	Verdi	McNamara, Mary Norine	Goldfield
Cahill, Agnes Marie	Austin	Merialdo, Isabel A.	Eureka
Cliff, Bertha Esther	Franktown	Porter, May Grace	Verdi
Duncan, Pearl	Reno	Rogantini, Mary Madeline	Eureka
Hancock, Edna Belle	Gold Hill	Taylor, Hazel Belle	Silver City
Hanley, Helen M.	Virginia City	Tinney, Hazel Margaret	Silver City
Hills, Elizabeth	Virginia City	Vaillencour, Alma Bernice	Yerington
Kaiser, Gussie May	Virginia City	Wilhelm, Sophie Adelaide	Eureka
Monahan, Margaret E.	Virginia City	Young, Margaret	Virginia City

SPECIAL STUDENTS

Allison, Mrs. Jean Kent	Liberal Arts	Reno
Ayers, Mrs. Albert D.	Liberal Arts	Reno
Adams, Leland Drew	Mines	Oakland, Cal.
Anderson, Walter Williams	Mines	Reno
Anderson, Morris D.	Civil Engineering	Palo Alto, Cal.
Aylsworth, Florence B.	Music	Reno
Badger, Charles Kilgore	Civil Engineering	Bakersfield, Cal.
Barr, Charles Wesley	Liberal Arts	Prairie View, Kan.
Bower, Grover Nervand	Mechanical Engineering	Santa Rosa, Cal.
Brown, Mrs. Ella M.	Physical Culture	Reno
Campbell, Eva S.	Liberal Arts	Reno
Carville, Alyn R.	Liberal Arts	Skelton
Chapman, Lloyd Gardiner	Mines	Wadsworth
Charles, William Mortimer	Agriculture	Reno
Chatfield, Mrs. Mabelle	Liberal Arts	Reno
Culpeper, Mrs. C. Zeruah	Domestic Science	Reno
Cunningham, Francis Jay	Liberal Arts	Sparks
Darewit, Elizabeth	Liberal Arts	Reno
Doten, Mrs. Alfred	Domestic Science	Reno
Doherty, William Francis	Mechanical Engineering	Reno
DeNure, Walter Byron	Mechanical Engineering	Reno
Dolan, Lawrence John	Civil Engineering	Los Angeles, Cal.
Ench, Frank B.	Mines	Oakland, Cal.
Ellithorpe, William Melvin	Mines	Reno
Frisch, Edward Chester	Mines	Reno
Franz, Helen Annette	Liberal Arts	Reno
Guirado, Alonzo	Mines	Los Angeles, Cal.
Gosse, Marguerite H.	Liberal Arts	Reno
Griffin, Emma	Domestic Science	Reno
Hamlin, George Spring	Mechanical Engineering	Sparks

Hibbard, Jeraldine Conger	Liberal Arts	Reno
Hardy, Royce Aller	Mines	Los Angeles, Cal.
Hess, Rush Miner	Mines	Evanston, Ill.
Hall, Edward F.	Mines	Goldfield
Hall, Mrs. Edward F.	Liberal Arts	Goldfield
Hart, Earle William	Mines	Goldfield
Holdeman, John W.	Liberal Arts	Reno
Horn, John Stephen	General Science	Reno
Hubbard, George R.	Mines	Tustin, Cal.
Johansen, Carl	Civil Engineering	Arroyo Grande, Cal.
Langwith, Eleanor Miriam	Liberal Arts	Golconda
Long, Leon Root	Mines	Amboy, Ill.
Lusk, Ward Webster	Mechanical Engineering	Reno
Lonkey, Lloyd Christian	Mechanical Engineering	Verdi
Menardi, Meda	Liberal Arts	Reno
McVicar, Neil William	Agriculture	Smith
Mackay, Eric Reay	Mines	Australia
Novacovich, Vera	Liberal Arts	Reno
Pierson, Helen	Domestic Science	Reno
Preston, Mrs. A. W.	Liberal Arts	Sparks
Robb, Raymond F.	Mechanical Engineering	Tonopah
Robinson, Mrs. H. D.	Liberal Arts	Reno
Schraps, Paul C.	Mines	Galilee, N. J.
Shepherd, Violet Eleanor	Liberal Arts	Golconda
Smith, Mrs. Charlotte W.	Liberal Arts	Reno
Souchereau, Obeline L.	Domestic Science	Verdi
Standerwick, Mrs. H. M.	Liberal Arts	Reno
Schupers, Mrs. Patti	Liberal Arts	Reno
Talbott, Zula	Domestic Science	Reno
Talbott, Ione	Domestic Science	Reno
Thoma, Bonnie	Art	Reno
Watson, Mrs. Anna	Art	Boise, Idaho
Weeks, Mrs. Maude B.	Liberal Arts	Reno
Weeks, Jessie M.	Liberal Arts	Wells
Webster, Ethel	Liberal Arts	Reno
Winkless, Adell	Domestic Science	Reno
Wood, Marjorie	Liberal Arts	Reno
Ziegler, Frank Chester	Mechanical Engineering	Reno

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School of Liberal Arts—		
Seniors	13	
Juniors	7	
Sophomores	9	
Freshmen	15	
Graduate	1	
Specials	26	
		71
School of Mines—		
Seniors	7	
Juniors	8	
Sophomores	4	
Freshmen	10	
Specials	15	
		44
School of General Science—		
Seniors	2	
Juniors	0	
Sophomores	5	
Freshmen	12	
Graduates	3	
Specials	1	
		23
School of Mechanical Engineering—		
Seniors	3	
Juniors	6	
Sophomores	5	
Freshmen	7	
Specials	8	
		29
School of Civil Engineering—		
Seniors	3	
Juniors	1	
Sophomores	1	
Freshmen	7	
Specials	4	
		16
School of Agriculture—		
Seniors	1	
Juniors	1	
Sophomores	0	
Freshmen	3	
Specials	2	
		7
Normal School		18
Domestic Science Specials		8
Art Specials		2
Music Specials		1
Physical Culture Specials		1
Total University Schools		220
Enrollment of men		116
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UNIVERSITY OF NEVADA BULLETIN

VOL. V JULY 15, 1911 No. 4

UNIVERSITY OF NEVADA REGISTER

TWENTY-THIRD ANNUAL NUMBER

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA
RENO, NEVADA

Entered at the postoffice at Reno, Nevada, as second-class matter under Act of Congress, July 16, 1894.



UNIVERSITY OF NEVADA BULLETIN

VOL. V JULY 15, 1911 No. 4

REGISTER

OF THE

UNIVERSITY OF NEVADA

For the Year 1910-1911

WITH ANNOUNCEMENTS FOR THE YEAR 1911-1912

TWENTY-THIRD ANNUAL NUMBER

PUBLISHED QUARTERLY
BY THE
UNIVERSITY OF NEVADA
RENO, NEVADA


UNION
LABEL

OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, May 1, 1911.

To His Excellency, TASKER L. ODDIE, *Governor of the State of Nevada.*

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1910–1911, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: ARTHUR A. CODD,
Chairman.

GEORGE H. TAYLOR, *Secretary.*

CALENDAR FOR 1911

JANUARY

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CALENDAR FOR 1912

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UNIVERSITY CALENDAR

1911

May 17	Wednesday	University Commencement
May 18–June 15	Thursday–Wednesday	Summer School in Mine Surveying
June 15–July 12	Thursday–Wednesday	Summer School in Geology

First Semester, 1911–1912

August 14–15	Monday–Tuesday	Examinations for admission
August 14–15	Monday–Tuesday	Reexaminations to remove conditions
August 15–16	Tuesday–Wednesday	Matriculation and registration
August 17	Thursday	Recitations and lectures begin
August 20	Sunday	University Convocation at 3 p. m. in the Gymnasium
September 4	Monday	Labor Day
October 31	Tuesday	Admission Day
November 30	Thursday	Thanksgiving
December 20	Wednesday	First semester ends
December 21	Thursday	Holiday vacation begins
1912		
January 7	Sunday	Holiday vacation ends

Second Semester, 1911–1912

January 8–9	Monday–Tuesday	Examinations for admission
January 8–9	Monday–Tuesday	Reexaminations to remove conditions
January 9–10	Tuesday–Wednesday	Matriculation and registration
January 11	Thursday	Recitations and lectures begin
January 14	Sunday	University Convocation at 3 p. m. in the Gymnasium
February 12	Monday	Lincoln's Birthday
February 22	Thursday	Washington's Birthday
April 5–7	Friday–Sunday	Easter recess
May 4	Saturday	Senior examinations end
May 11	Saturday	Annual meeting of the Honorary Board of Visitors
May 11	Saturday, 2 p. m.	Exhibition of Domestic Science Department
May 11	Saturday, 8 p. m.	Senior farce

[*Calendar continued on next page.*]

May 12	Sunday	Baccalaureate Sunday
May 12	Sunday, 5 p. m.	Band concert on Mackay Quadrangle
May 13	Monday	Thesis Day
May 13	Monday (evening)	High School Commencement
May 14	Tuesday	Annual meeting of the Board of Regents
May 14	Tuesday	Class Day
May 14	Tuesday, 4 p. m.	Examinations end
May 14	Tuesday, 8 p. m.	Folk songs and dances by Department of Physical Training for Women on Mackay Quadrangle
May 15	Wednesday, 10 a. m.	Review of Cadets on the Quadrangle
May 15	Wednesday, 10:30 a.m.	COMMENCEMENT
May 15	Wednesday, 8 p. m.	Senior party

OFFICERS OF ADMINISTRATION

THE REGENTS OF THE UNIVERSITY

The Hon. Arthur A. Codd (1909–1913) Chairman.....Reno
The Hon. Frank Williams (1909–1913).....Good Springs
The Hon. Charles B. Henderson (1911–1915).....Elko
The Hon. Hosea E. Reid (1911–1915).....Reno
The Hon. James W. O'Brien (1911–1913).....Sparks
Mr. George H. Taylor, Secretary.....Reno

THE HONORARY BOARD OF VISITORS

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Hon. H. A. Comins.....Ely, White Pine County
Hon. Geo. F. Talbot.....Carson City, for Elko County
Hon. William J. Douglass.....Tonopah, Nye County
Hon. Maurice Sullivan.....Goldfield, Esmeralda County
Hon. A. R. Merritt.....Fallon, Churchill County
Hon. Robert M. Price.....Reno, Washoe County
Hon. Edward Reinhart.....Winnemucca, Humboldt County
Hon. Chas. Fulstone.....Jack Valley (Genoa) Douglas County
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Hon. John Shier.....Caliente, Lincoln County
Hon. F. H. Norcross.....Carson City, Ormsby County
Hon. Jas. H. Kinkead.....Virginia City, Storey County
Hon. W. E. Lawson.....Mason, Lyon County

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Vice-President.....Robert Lewers
Superintendent of Buildings and Grounds.....Richard Brown
Registrar.....Charles H. Gorman
Assistant Registrar.....Louise M. Sissa
Librarian.....Joseph Dieffenbach Layman
Office Secretary.....Carolyn M. Beckwith

EXECUTIVE COMMITTEE

JOSEPH EDWARD STUBBS
ROBERT LEWERS
JAMES EDWARD CHURCH, JR.
PETER FRANDSEN
MAXWELL ADAMS
WILLIAM S. TANGIER SMITH
HERBERT WYNFORD HILL
GORDON HAINES TRUE
GEORGE J. YOUNG

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

ADMINISTRATIVE COMMITTEES

Student Affairs for Men.....LEWERS, BROWN, TRUE, MCCLURE, PALMER
Student Affairs for Women....Miss BARDENWERPER, Miss MEIGHAN, Mrs. KAYE
Athletics.....SCRUGHAM, MCCLURE, HASEMAN
Public Exercises.....DOTEN, BOARDMAN, LAYMAN, Miss LEWERS, Miss DE LAGUNA
Literary Contests.....Miss WEIR, HASEMAN, PAINE
Public Health.....MACK, Mrs. KAYE, JOHNSTONE
Delinquent Scholarship.....YOUNG, FRANDSEN, M. ADAMS
Military Affairs.....MCCLURE, KNIGHT, JONES

ACADEMIC COMMITTEES

Admission and Advanced Standing.....HILL, SMITH, HARTMAN
Registration.....FRANDSEN, YOUNG, M. ADAMS
Graduation and Theses.....ORDAHL, HASEMAN, THOMPSON
Schedule and Examinations.....BOARDMAN, HASEMAN, THOMPSON
University Publications.....CHURCH, JACOBSON, HILL
Library.....LAYMAN, CHURCH, Miss WIER, JACOBSON, ORDAHL
Graduate Courses.....R. ADAMS, CHURCH, HARTMAN
Advisory Committee.....

The President is "ex officio" member of all Standing Committees.

UNIVERSITY FACULTY

OFFICERS OF INSTRUCTION AND ADMINISTRATION

With the exception of the President, the names of all professors and officers in the first group whose appointments antedate April, 1907, are arranged in order of appointment to rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, assistants, and officers are arranged in their respective groups according to order of appointment to present rank.

JOSEPH EDWARD STUBBS

President of the University

Instructor in Greek and Latin, Ohio Wesleyan University, 1872–75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880–86; President Baldwin University, Ohio, 1886–94; Honorary D.D., German Wallace College, 1890; President Ohio College Association, 1891–92; President of the University of Nevada, 1894–; Professor of Psychology and Ethics, 1894–95; Professor of Political Science and Ethics, 1895–1904; Professor of Elementary and International Law, 1904–11; President Association of American Agricultural Colleges and Experiment Stations, 1899–1900; LL.D., Ohio Wesleyan University, 1905.

University Campus. Phone 171.

ROBERT LEWERS

Vice-President, Professor of Elementary and International Law and Teacher of Commercial Subjects

Teacher, Public Schools, Mill Station, Nevada, 1882–83; Sutro, Nevada, 1884–85; Dayton, Nevada, 1886–89; Registrar, University of Nevada, 1890–1906; Professor of Political Economy and Principal of the Commercial School, 1890–1911; Professor of Elementary and International Law and Teacher of Commercial Subjects, 1911–.

Elks' Hall, 38 West First Street. Phone 431.

RICHARD BROWN

Superintendent of Buildings and Grounds and Master of Lincoln Hall

Cutter in United States Mint, Carson City, 1889–1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891–1899; Superintendent of Buildings and Grounds, University of Nevada, 1891–; Superintendent of University Dining Hall, University

of Nevada, 1895–; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–.

Lincoln Hall, University Campus. Phone 173.

THOMAS W. COWGILL

Emeritus Professor of the English Language and Literature

A.B., Harvard University, 1883; Professor of English, Mt. Union College, Ohio, 1884–85; Professor of Greek and English, Kansas Wesleyan University, 1886–1890; Fellow in English, Vanderbilt University, 1887–88; A.M., Vanderbilt University, 1888; Teacher of Greek and Latin, St. John's School, Salina, Kansas, 1890–91; Professor of History, Rhetoric, and English Literature, University of Nevada, 1891–97; Professor of the English Language and Literature, 1897–99; Professor Emeritus 1899–.

305 Maple Street.

JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher, District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896– (absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich 1901; Student, Archæology and Art, Italy and Greece, 1901.

358 Washington Street. Phone 1563.

LAURA DE LAGUNA

Professor of Romanic Languages

Instructor in English, Mills Seminary, California, 1888–89; Instructor in French and English, Oakland Seminary, California, 1890–91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894–95; Student Romance Languages, Rome, Paris, 1895–96; Instructor in Modern Languages, University of Nevada, 1896–99; Assistant Professor of Modern Languages, 1899–1901; Associate Professor of Modern Languages, 1901–1906; Professor of Modern Languages, 1907–1911; Professor of Romanic Languages, 1911–.

1029 North Virginia Street.

JEANNE ELIZABETH WIER

Professor of History

Teacher, Public Schools, Rockwell, Iowa, 1889–1892; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893–95; Student, Leland Stanford Junior University, 1896;

Acting Assistant Professor of History, University of Nevada, 1899–1901; B.A. (History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901–06; Secretary, Nevada Historical Society, 1904–; Professor of History, 1907–.

834 North Center Street. Phone 95.

PETER FRANDSEN

Professor of Biology

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895–96; A.B., Harvard University, 1898; A.M., 1899; Tutor and Assistant in Zoology, Harvard University, 1898–99; Graduate Student, Harvard University, 1899–1900; Assistant in Zoology, Harvard University and Radcliffe College, 1899–1900; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900–02; Associate Professor Zoology and Bacteriology, 1902–03; Professor of Zoology and Bacteriology, 1903–06; Professor of Biology, 1906–; Absent on leave, travel and study in Europe, 1910.

210 Maple Street. Phone 1163

PATRICK BEVERIDGE KENNEDY[1]

Professor of Botany, Horticulture and Forestry

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900–; Associate Professor of Botany and Horticulture, University of Nevada, 1900–02; Professor of Botany, Horticulture and Forestry, 1902–.

Reno, Nevada, General Delivery.

[1] Absent in Europe, 1910–11.

GEORGE J. YOUNG

Professor of Mining and Metallurgy

B.S., College of Mining, University of California, 1899; Analytical Assistant, Mining Department, University of California, 1899–1900; Student of Economic Deposits, and Mining and Metallurgical Practice in the Field during summer months, 1900, Bodie District, California; 1901, in Utah, Colorado, California; 1902, in Utah and Montana; 1903–04, in Nevada and California; Assistant Professor of Metallurgy, University of Nevada, 1900–02; in charge of Nevada State Mining Laboratory, 1900–; Member of American Institute of Mining Engineers, 1900–; Professor of Mining and Metallurgy, University of Nevada, 1902–.

737 North Center Street. Phone 780.

SAMUEL BRADFORD DOTEN

Professor of Entomology

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898–1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900–05; Instructor in Mathematics and Entomology, 1900–02; Assistant Professor of Mathematics and Entomology, 1902–03; Assistant Professor of Entomology, Meteorology and Mathematics, 1903–05; Principal of the University High School and Teacher of Mathematics, Consulting Entomologist, and Meteorologist, Nevada Agricultural Experiment Station, 1905–06; Entomologist, Experiment Station, and Professor of Entomology, 1906–.

323 West Street. Phone 62.

ROMANZO ADAMS

Acting Professor of Economics and Professor of Education and Sociology

Teacher, Public School, Bloomingdale, Wisconsin, 1886–87; Marshalltown, Iowa, 1887–88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892–94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology and Principal of the Normal Department, Western College, Iowa, 1898–1900; Graduate Student, University of Chicago, 1900–02; Fellow in Sociology, University of Chicago, 1901–02; Ph.D. (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905–10; Director, N. E. A., 1908–10; Professor of Education and Sociology, University of Nevada, 1902–; Acting Professor of Economics, 1911–.

735 West Street. Phone 1498.

GORDON HAINES TRUE

Professor of Agriculture and Animal Husbandry

B.S., University of Wisconsin, 1894; Instructor in Dairy Husbandry, Michigan Agricultural College, 1894–99; Professor of Animal Husbandry, University of Arizona, 1899–1903; Chairman Executive Committee, Arizona Agricultural Association, 1901–03; Professor of Agriculture and Animal Husbandry, University of Nevada, 1903–.

755 North Peavine Street. Phone 1113.

JAMES GRAVES SCRUGHAM

Professor of Mechanical Engineering

B.M.E., Kentucky State College, 1900; with Creaghead Engineering Company, Cincinnati, Ohio, 1900; Instructor in Physics and Drawing, High School, Fort Smith, Arkansas, 1901; Graduate Student, University of Michigan, summer, 1901; Director of Manual Training, High School,

Highland Park, Chicago, 1901–03; with Metropolitan Elevated Railway, Chicago, 1902; Instructor in Mechanical Engineering, Kentucky State College, Summer School, 1903; Assistant Professor of Mechanical Engineering, University of Nevada, 1903–05; Member of International Electrical Congress, 1904; with Abner Doble Company, San Francisco, summer, 1905–06; Associate Professor of Mechanical Engineering, University of Nevada, 1905–06; M.E., Kentucky State University, 1906; Instructor in Mechanical Engineering, Summer School, University of Wisconsin, 1907; Engineer of Tests, Oregon Short Line Railroad, summers, 1908–10; Professor of Mechanical Engineering, University of Nevada, 1906–. Nevada and Eighth Streets. Phone 1740.

WILLIAM SIDNEY TANGIER SMITH

Professor of Geology and Mineralogy

B.L., University of California, 1890; Graduate Student, Johns Hopkins University, 1890–91; Ph.D., University of California, 1896; Professor of Mathematics and Natural Science, Occidental College, Los Angeles, 1894–95; Fellow in Mineralogy, University of California, 1895–97; Professor of Mathematics, State Normal School, Chico, California, 1897–98; Assistant in Chemistry, University of California, 1898; Assistant in Mineralogy, University of California, 1899–1900; Assistant Geologist, U. S. Geological Survey, 1900–07; Associate Professor of Geology and Mineralogy, University of Nevada, 1906–07; Professor of Geology and Mineralogy, University of Nevada, 1907–; Fellow, Geological Society of America; Fellow, American Association for the Advancement of Science.

155 University Terrace. Phone 1659.

MAXWELL ADAMS

Professor of Chemistry

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890–91; A.B. (Chemistry), Stanford University, 1895; A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in Chemistry, Leland Stanford Junior University, 1895–97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of Chemistry and Physics, State Normal School, Chico, California, 1897–1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900–01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900–06; Consulting Chemist to Diamond Match Company, 1901–06; Fellow, American Association for the Advancement of Science; Professor of Chemistry, University of Nevada, 1906–.

29 West Ninth Street. Phone 1502

WINFRED BERDELL MACK

Professor of Bacteriology and Veterinary Science

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904–1905; Assistant in Pathology and Bacteriology, Cornell University, 1905–06; Veterinarian and Bacteriologist, Nevada Agricultural Experiment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1907–; Director of State Hygienic Laboratory, 1909–.

829 Lake Street. Phone 498.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–03; Graduate Student and Reader, University of Chicago, June, 1903–June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904–September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905–September, 1905; Fellow in English, University of Chicago, June, 1906–September, 1907; Professor of the English Language and Literature, University of Nevada, 1907–.

820 North Center Street. Phone 1872.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

255 University Terrace. Phone 886.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888–August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891–January, 1892; Instrumentman, Memphis Artesian Water Company, January–September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; with Engineering Department Sanitary District of Chicago, on Topographic Surveys and in charge of Cement Testing Laboratory, June, 1894–December, 1896; miscellaneous engineering work, Chicago, January–August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897–August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901–March, 1904; Superintendent, Savage Construction Company (bridge substructure),

1904; Draftsman and Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January–August, 1905; Superintendent, Fitzsimmons and Connell Company (bridge substructure), August–December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer in charge branch canal projects, Sanitary District of Chicago, January–August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.

737 North Peavine Street. Phone 1803.

LOWE ABEEL McCLURE

Professor of Military Science and Tactics; Instructor in Physical Education for Men.

Graduate, United States Military Academy, 1904; commissioned Second Lieutenant of Infantry, June 15, 1904: served with the 15th Infantry for two years in the Island of Mindanao, P. I., and three years with the same regiment in the United States; Professor of Military Science and Tactics, University of Nevada, 1909–.

145 Ridge Street. Phone 1515.

LEON WILSON HARTMAN

Professor of Physics

B.S., Cornell University, 1898; A.M., 1899; Graduate Scholar in Physics, 1899; Assistant in Physics, 1900–01; Professor of Physics, Kansas Agricultural College, 1901–02; Frazer Fellow in Physics, University of Pennsylvania, 1902–03; Ph.D., 1903: Tyndale Fellow in Physics of the University of Pennsylvania, Gottingen, 1903–04; Instructor in Physics, Cornell University, 1904–05; Assistant Professor of Physics, University of Utah, 1905–06; Associate Professor of Physics, 1906–09; Professor of Physics, 1909; Fellow A.A.A.S., Am. Phys. Soc., Utah Academy of Science; Professor of Physics, University of Nevada, 1909–. 215 Maple Street. Phone 851.

CARL ALFRED JACOBSON

Professor of Agricultural Chemistry

Teacher, Public Schools of Wisconsin, 1894–96; Carleton Academy, 1896–98; B.S., Carleton College, Northfield, Minnesota, 1903; Graduate Student, Johns Hopkins University, Baltimore, Maryland, 1903–04: Europe, 1901–02; Instructor in Chemistry, York City High School, York, Pennsylvania, 1904–07; M. S. (*in absentia*), Carleton College, 1907; Ph.D., Johns Hopkins University, 1908 (Chemistry, Physical Chemistry and Physics); Fellow and Research Chemist, Rockefeller Institute for Medical Research, New York, 1908–09; Professor of Agri-

cultural Chemistry, University of Nevada, and Chief Chemist, Nevada Agricultural Experiment Station, 1909–.

CHARLES HASEMAN

Professor of Mathematics and Mechanics

A.B., Mathematics, Indiana University, 1903; Instructor of Mathematics and Physics, High School, Elwood, Indiana, 1903–05; A.M., Indiana University, 1906; Assistant in Mathematics, Indiana University, 1905–06; Ph.D., Mathematics, University of Gottingen, 1907; Instructor in Mathematics, Indiana University, 1907–08; Assistant Professor of Mathematics, Indiana University, 1908–09; Associate Professor of Mathematics, University of Nevada, 1909–10; Professor of Mathematics and Mechanics, University of Nevada, 1910–.

752 North Center Street. Phone 359.

JOHN CALVIN WATSON

Professor of Greek

A.B., Eureka College, 1892; A.B., Harvard University, 1894; Teacher of Latin and Greek, High School, Menominee, Michigan, 1894–96; Principal, 1895–96; Teacher of Latin, Lake View High School, Chicago, 1896–99; Graduate Student in Classical Philology, Harvard University, 1899–1902; A.M., 1900, and Ph.D., 1902, Harvard University; Assistant in Classics, Radcliffe College, 1900–01; Instructor in Latin, Cornell University, 1902–07; Reader in Latin at Entrance Examinations for Harvard University and Radcliffe College, and for the College Entrance Examination Board, 1903–06; Assistant Professor of Greek, University of Nevada, 1910–1911; Professor of Greek, 1911–.

749 North Lake Street.

GEORGE ORDAHL

Professor of Psychology and Education

Principal, Public Schools, Merrillville, Indiana, 1900–01; Corvallis, Montana, 1901–03; A.B., University of Oregon, 1905; A.M., 1906; Fellow, Clark University, Worcester, Massachusetts, 1906–08; Ph.D., Clark University, 1908; Professor of Psychology and Education, Geneva College, Beaver Falls, Pennsylvania, 1908; Assistant Professor of Psychology and Education, University of Nevada, 1909–11; Professor of Psychology and Education, 1911–.

STERLING PRICE FERGUSSON

Professor of Meteorology and Climatology

Assistant to H. H. Clayton at Blue Hills Observatory, 1887–1890; Assistant in Charge of Instruments, Blue Hills Observatory, 1890–1909; Meteorologist, 1909–10; Associate Observer in Meteorology and Clima-

tology, Nevada Experiment Station, 1910–; Professor of Meteorology and Climatology, University of Nevada, 1911–.

OSCAR P. JOHNSTONE

Associate Professor of Physiology and Hygiene

Ph.B., College of Grinnell, Iowa, 1897; M.S., University of Iowa, 1902; M.D., Rush Medical College, 1905; Fellow in Chemistry, University of Iowa, 1900–01; Assistant in Physiology, Cornell University, 1901–03; Assistant in Physiology, Cornell University, Summer School, 1903; Assistant in Pathology, Rush Medical College, 1903–04; Fellow in Pathology, Rush Medical College, 1904–06; Professor of Pathology, University of Colorado, 1905–07; Substitute in Pathology, Rush Medical College, for Professor Ricketts, summer of 1907; for Professor LeCount, spring of 1908; Pathologist, Mercy Hospital, Pittsburg, Pennsylvania, 1908–09; Associate Professor of Physiology and Hygiene, University of Nevada, 1909–; Assistant State Hygienic Laboratory, 1909–.

636 North Center Street.

REUBEN CYRIL THOMPSON

Associate Professor of Latin and Greek and Principal of the University High School

B. A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., Harvard, 1902; Instructor in Latin and History, High School, Boise City, Idaho, 1902–05; Professor in Latin, State Normal School, Albion, Idaho, 1905–08; Instructor in History and Civics, Idaho State Summer Normals, 1907–08; Instructor in Latin and Greek, University of Nevada, 1908–09; Assistant Professor of Latin and Greek and Associate Principal of the University High School, 1909–10; Associate Professor of Latin and Greek and Principal of the University High School, 1910–.

821 North Center Street.

KATE BARDENWERPER

Assistant Professor of Domestic Science

Graduate, State Normal School, San José, California, 1880; Teacher, Public Schools, Carson City, Nevada, 1880–86; First Assistant, High School, Carson City, 1886–94; Critic Teacher Training School, University of Nevada, 1894–99; Student Leland Stanford Junior University, 1898–99; Student University of California, 1900–01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S. (Domestic Science), 1901; Instructor in Domestic Science, University of Nevada, 1904–05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Domestic Science, University of Nevada, 1905–.

1029 North Virginia Street.

SANFORD CROSBY DINSMORE

Assistant Professor of Agricultural Chemistry

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903–05; Chemist, Nevada Agricultural Experiment Station, 1905–09; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906–; In Charge Food and Drugs Control, 1910–. 223 University Terrace. Phone 1744.

KATHERINE LEWERS

Assistant Professor of Freehand Drawing

Student, St. George's Art School, Glasgow, 1893–94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894–97; Student with Howard Helmick, Washington, D. C., 1897–99; received prize scholarship New York School of Design, 1900; studied at New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905–; Photographer, Nevada Experiment Station, 1905–; Assistant Professor of Freehand Drawing, 1907–.

745 North Center Street. Phone 604.

J CLAUDE JONES

Assistant Professor of Geology and Mineralogy; Curator of the Museum

A.B., University of Illinois, 1902; Instructor of Physics and Manual Training, Champaign High School, 1902–03; Instructor of Manual Training, Whiting High School, 1903–04; Assistant in Geology, University of Illinois, 1904–05; Instructor in Geology, University of Illinois, 1905–06; Graduate Student, University of Chicago, 1906–09; Research Assistant in Geology, University of Chicago, 1907–09; Instructor in Physiography, University of Kansas, summer term, 1907; Instructor in Physiography, University of Chicago, summer term, 1908; Member of the State Geological Survey of Illinois, 1906–09; Instructor in Geology and Mineralogy, University of Nevada, 1909–10; Curator of the Museum, University of Nevada, 1909–; Assistant Professor of Geology and Mineralogy, University of Nevada, 1910–.

117 West Tenth Street. Phone 823.

CHARLES S. KNIGHT

Assistant Professor of Agronomy

B.S., Agriculture, University of Wisconsin, 1907; Assistant in Feed and Fertilizer Inspection, University of Wisconsin, July, 1907–January, 1908; Assistant in Agronomy, Kansas State Agricultural College, January 1908–09; Instructor in Agronomy, University of Nevada, 1909–10; Assistant Professor of Agronomy, University of Nevada, 1910–.

1015 North Sierra Street. Phone 65.

AMOS ARTHUR HELLER

Assistant Professor of Botany, Horticulture and Forestry

A.B., Franklin and Marshall College, 1892; A.M., 1897; Field Agent, U. S. Department of Agriculture, 1892; Botanical explorations in Virginia, North Carolina, Texas, Hawaiian Islands, Idaho, 1893–96; Instructor in Botany, University of Minnesota, 1896–98; Chief of Vanderbilt Expedition of New York Botanical Garden to Porto Rico, 1898–99; in publishing business, Lancaster, Pennsylvania, 1900–01; Botanical explorations in California, 1902–07; Author of Catalogue of North American Plants, 3 editions; Editor of Muhlenbergia, 1900–; Author of 120 botanical papers; Member of the Torrey Botanical Club ot New York City, and of the Linnæen Society of Lancaster, Pennsylvania; Assistant Botanist, Horticulturist and Forester, Nevada Agricultural Experiment Station, 1908–10; Assistant Professor of Botany, Horticulture and Forestry, University of Nevada, 1910–.

539 West Fifth Street.

CHARLES HENRY GORMAN

Registrar

Registrar, University of Nevada, 1911–.

ALICE EUNICE ARMSTRONG

Assistant Librarian

Assistant Librarian, Fresno Free Public Library, June, 1896; Librarian, October, 1899–June, 1905; Acting Librarian, University of Nevada, 1905–07; Assistant Librarian, 1907–.

41 West Ninth Street. Phone 942.

LOUISE MARY SISSA

Assistant Registrar

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884–1892; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893–1901; House Mother, Rowland Hall, Salt Lake City, 1901–05; House Mother, Miss Head's School, Berkeley, California, 1905–06; Assistant Registrar, University of Nevada, 1906–. 1033 Ralston Street. Phone 1417.

GUSTAVUS SWIFT PAINE

Instructor in English

Ph. B., University of Chicago, 1908; Ph.M., University of Chicago, June, 1909; Instructor in English, University of Nevada, 1909–.

737 North Center Street. Phone 780.

HELEN ANN MEIGHAN

Instructor in Physical Education for Women

Graduate of High School, Mankato, Minnesota, 1893; Special Student, State Normal School, Mankato, Minnesota, 1894–97; Teacher in Public Schools with special work in Calisthenics, Duluth, Minnesota, 1898–1903; Principal of School and special work in Calisthenics, Missoula, Montana, 1903–05; Special work in Physical Training under Max Aletzhaeuser of Leipzig, Germany; Private pupil of Miss Anna Buttner, of Dr. Sargent's School, Harvard University; specialized in Physical Training, University of Minnesota; Special Teacher in Physical Training, Public Schools, Goldfield, Nevada, 1907–09; Director of Physical Training for Women, University of Nevada, 1909–; Student Summer School Columbia University, 1910.

Manzanita Hall, University Campus. Phone 176.

GEORGE DELAFIELD POWERS

Instructor in Mechanical Engineering

B.S., University of Nevada, 1907; Testing Engineer, General Electric Company, 1907–08; Electrical Foreman, Southern Pacific Company, 1908–10; Instructor in Mechanical Engineering, University of Nevada, 1910–.

310 Thoma Street.

WALTER S. PALMER

Instructor in Mining and Metallurgy

B.S., Mining Engineering, University of Nevada, 1905; with the Greene Consolidated Copper Company, Cananea, Mexico, 1905; Mining and Metallurgical practice in the field, summer months, 1906—Virginia City, Nevada, and Wilkes-Barre, Pa.; E.M., School of Mines, Columbia University, New York, 1907; Mine Surveyor, United States Smelting, Refining and Mining Company, Mammoth, California, 1907–08; Assistant Chemist, Balaklala Consolidated Copper Company, Coram, California, 1908–09; Mining Engineer, United States General Land Office, 1909–10; Instructor in Mining and Metallurgy, University of Nevada, 1910–.

204 Mill Street. Phone 475.

ALBERT WILLIAM PRESTON

Instructor in Mechanical Engineering

Machinist, C. R. I. & P. R. R., 1897–1901; Toolmaker, McNeil Machinery Company, 1901; Assistant Machine Foreman, Chicago Great Western Ry., 1902–05; Machinist and Assistant Foreman, Southern Pacific Ry., 1905–1910; Student in Engineering, University of Nevada Extension School, 1905–09; Instructor in Mechanical Engineering, University of Nevada, 1910–.

CARL SAWVELL[1]

Instructor in Vocal Music

Student under Professor John Slack, Pittsburg, Pennsylvania, 1882–85; Student under Signor L. C. Barabini, Milan, Italy, 1885–88; Instructor and Lecturer in Music, 1888–; In charge of the Grand Chorus of 700 voices for the Sovereign Grand Lodge, I. O. O. F., of the World, San Francisco, California, 1904; Director of Music for the California State Christian Endeavor Society, Greek Theater, Berkeley, California, July, 1906; Instructor, Vocal Music, University of Nevada, 1910–11. 106 East Ninth Street. Phone 428.

[1] Resigned June 1, 1911.

FRANK LEROY PETERSON

Instructor in Irrigation

B.S., Mechanical Engineering, University of Nevada, 1907; Field Assistant in Irrigation Investigations in cooperations between U. S. Department of Agriculture and State of Nevada, 1908–11; Agent in Irrigation Investigations, U. S. Department of Agriculture, for State of Nevada, 1911–; Assistant in Irrigation, Nevada Agricultural Experiment Station, 1911–; Instructor in Irrigation, University of Nevada, 1911–.

Experiment Station Farm, East Ninth Street. Phone 492.

CHARLES LEROY BROWN

Assistant in Biology

Teacher in Public Schools, 1894–1905; Student at Pacific College, 1894–95; Student at Christian College, 1897–98; Student at University of Nevada, 1905–08; Assistant in Biology, University of Nevada, 1906–1908; Student, University of California, 1908–09; Student, University of Nevada, 1909–; Assistant in Biology, University of Nevada, 1910–.

Whitaker Hall, Ralston Street.

MILES BRYCE KENNEDY

Assistant in Chemistry

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1907–08; Assistant in Chemistry, 1908–.

120 East Eighth Street. Phone 1719.

WALTER W. ANDERSON

Assistant in Chemistry

Teacher, Public Schools of Wisconsin, 1897–98; practical mining work, 1899–1900; Mine Superintendent, Granite Creek Smelting and Refining Co., Nevada, 1901 and 1902; Purchasing Agent, U. S. Reclamation Service (Truckee-Carson Project), 1903–1906; Student, Uni-

versity of Nevada, 1906–; Student Assistant, Physics, 1908–09; Assistant in Chemistry, University of Nevada, 1910–.

University Heights.

NELLIE GODBOLT

Assistant in History

Teacher in Grammar Schools, Tehama County, California, 1907–08; A.B., University of California, May, 1910; Graduate Student, University of California, August to December, 1910; Fellow and Assistant in History, University of Nevada, 1911–.

Manzanita Hall, University Campus. Phone 176.

AUGUST HOLMES

Student Assistant in Mathematics

Student Assistant in Mathematics, 1910–.

Lincoln Hall, University Campus. Phone 173.

CAROLYN M. BECKWITH

Secretary to the President

Assistant Office Secretary, 1902–03; Secretary to the President, 1904–.

638 Washington Street. Phone 1387.

MRS. A. E. KAYE

Mistress of Manzanita Hall

Mistress of Manzanita Hall, 1904–.

University Campus. Phone 176.

MRS. M. E. PORTER

Matron of University Hospital

Matron of University Hospital, 1907–.

University Campus. Phone 171—2 rings.

AFFILIATED ORGANIZATIONS

THE STATE MINING LABORATORY

STAFF

JOSEPH EDWARD STUBBS.....President
GEORGE J. YOUNG.....In Charge
W. S. TANGIER SMITH.....Geologist and Mineralogist
J CLAUDE JONES.....Assistant
WALTER S. PALMER.....Assistant
CAROLYN M. BECKWITH.....Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have them analyzed and assayed without cost. (Secs. 1402–1405, incl., Compiled Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that these must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be given to the sender, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which it came and all other matters that may be beneficial touching the same."

In compliance with the above section, reports have been rendered and a record book kept. In order to make reports as accurate as possible, it is suggested that the citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or

mineral. Lack of sufficient data necessitates almost always general statements concerning value.

THE STATE HYGIENIC LABORATORY

STAFF

JOSEPH EDWARD STUBBS.....President
WINFRED B. MACK.....Director
OSCAR P. JOHNSTONE.....Pathologist and Bacteriologist

The State Hygienic Laboratory was organized during 1909, under the provision of an Act of the Legislature approved March 25, 1909. The object of the laboratory is to provide facilities for the diagnosis of the infectious diseases and for research into the nature, cause and methods for the control of such diseases. The services of the laboratory staff are available to the physicians, health officers and health boards of the State for the diagnosis of certain communicable diseases. Advice and assistance will, on request, be rendered the sanitary officials in the control of outbreaks of infection and in securing sanitary supplies of milk and water.

The results of the work of the laboratory are made public from time to time through bulletins, circulars, and annual reports, and will be sent free on request to residents of the State who desire them.

LABORATORY FOR PURE FOOD AND DRUGS

STAFF

JOSEPH EDWARD STUBBS.....Director
SANFORD CROSBY DINSMORE.....Chemist in Charge
MILES BRYCE KENNEDY.....Assistant
SILAS EARL ROSS.....Assistant

An Act providing for the inspection and analysis of foods, drugs and liquors, manufactured or offered for sale within this State, was passed by the 1909 session of the Legislature, and became effective January 1, 1910. The State law is modeled after the National Food and Drugs Act of June 30, 1906, and provides that all rules, regulations, definitions, and decisions proclaimed by the Secretary of Agriculture for the enforcement of the National law shall be adopted by this department in the enforcement of the State law.

With such provision Nevada receives valuable aid through the Federal regulations, and avoids conflict with neighboring States having laws also modeled closely after the National

Act. Uniformity in State and National laws, and cooperation among officials, is much to be desired, and more can be accomplished under such conditions than by working under laws that are dissimilar or antagonistic to established regulations that have been in vogue in States maintaining food laws for a number of years.

The laws of this State being similar to the National law, obviates the necessity of manufacturers providing special labels to meet any special requirements that otherwise might exist in this State. Often labels are submitted to this department for approval or correction so that they will comply with the Nevada food law.

THE AGRICULTURAL EXPERIMENT STATION

THE BOARD OF CONTROL

The HON. ARTHUR A. CODD (1909–1913) Chairman.....Reno
The HON. FRANK WILLIAMS (1909–1913).....Good Springs
The HON. CHAS. B. HENDERSON (1911–1915).....Elko
The HON. HOSEA E. REID (1911–1915).....Reno
The HON. JAMES W. O'BRIEN (1911–1913).....Sparks
Mr. GEORGE H. TAYLOR, Secretary.....Reno

STAFF

JOSEPH EDWARD STUBBS.....Director
P. BEVERIDGE KENNEDY, Ph.D.....In Charge of Botany, Horticulture, and Forestry
AMOS ARTHUR HELLER, A.M.....Assistant in Botany, Horticulture, and Forestry
GORDON HAINES TRUE, B.S.....In Charge of Agriculture, Animal Husbandry, and Irrigation
FRANK LEROY PETERSON, B.S.....Assistant in Irrigation
CHARLES S. KNIGHT, B.S.....Agronomist
SAMUEL BRADFORD DOTEN, B.A.....Entomologist
WINFRED BERDELL MACK, D.V.M.....Bacteriologist and Veterinarian
JAMES EDWARD CHURCH, JR., Ph.D.....Observer in Meteorology and Climatology
S. P. FERGUSSON.....Associate Observer in Meteorology and Climatology
CARL JACOBSON, Ph.D.....Chemist
SANFORD CROSBY DINSMORE, B.S.....Chemist in Charge of Food and Drugs
MILES BRYCE KENNEDY, B.S.....Assistant Chemist in Charge of Food and Drugs

THEODORE CLARK.....Farm Superintendent
Mrs. THOMAS W. COWGILL, A.M.....Librarian
CAROLYN M. BECKWITH.....Stenographer

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated $15,000 annually for the support of an Agricultural Experiment Station in each State and Territory of the Union.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; the economic relation of entomology to agriculture; the relation of climate to agriculture and horticulture; the conservation of snow; the forecasting of frost; the determination of relatively frost-free areas for fruit growing; in fact the solving of all problems pertaining to agriculture which are or may be of importance to the State.

The results of the work of the Station are made public through bulletins and reports, which are sent free to all residents of the State who desire them.

ASSOCIATION OF UNIVERSITY ALUMNI

1910–11

President.....Frank H. Norcross, '91
Vice-President.....David W. Hayes, '00
Secretary-Treasurer.....Mrs. Florence Humphrey Church, '02

EXECUTIVE COMMITTEE

The Officers
John W. Wright, '05
Mrs. Maude Wheeler Senseney, '96

1911–12

President.....David W. Hayes, '00
Vice-President.....Elizabeth Stubbs True, '99
Secretary-Treasurer.....Louise Blaney Twaddle, '95

EXECUTIVE COMMITTEE

The Officers
Ida Holmes Hays, '00
Clyde Stuart McKenzie, '10

ASSOCIATION OF NORMAL ALUMNI

President.....Mrs. Mary Snow Thurtell, '90
Vice-President.....Irene V. Brown, '09
Secretary-Treasurer.....Mrs. Hattie Rhodes Pierson, '90

UNIVERSITY ADDRESSES

SECOND SEMESTER, 1909–1910

March 23, 1910—Reverend Dr. C. A. Barbour of the New York Young Men's Christian Association. Subject: "Is Life Worth While?"

March 29, 1910—Dr. Henry S. Pritchett, President of the Carnegie Foundation for the Advancement of Teaching, New York.

April 21, 1910—Seumas MacManus of New York. Subject: "Fairy Tales and Folk Lore of Ireland."

May 13, 1910—Short addresses to the students by C. L. Titus, Field Secretary of the Young Men's Christian Association; Mrs. Lulu L. Shepard of the Women's Christian Temperance Union of Salt Lake City; and by Rev. C. L. Mears of the Congregational Church.

COMMENCEMENT, 1910

Annual Baccalaureate Sermon, Sunday, May 22, 1910, by the Reverend George C. Adams, Pastor of the First Congregational Church of San Francisco.

Annual Commencement Address, Wednesday, May 25, 1910, by Dr. David P. Barrows, Professor of Education, University of California.

Scholarship Address by the Honorable Frank Williams of Good Springs, Nevada, Member of the Board of Regents.

FIRST SEMESTER, 1910–11

August 19, 1910—Dr. Herbert W. Hill, Address of Welcome to the students on behalf of the Faculty. Reverend W. D. Trout, Address of Welcome to the students on behalf of the Townspeople.

August 21, 1910—Convocation Sermon by Reverend Brewster Adams: Text, "And that ye do study to be quiet, and to do your own business, and to work with your own hands, even as we charged you." I Thessalonians, 4–11.

August 26, 1910—Professor Peter Frandsen, "My Trip Abroad."

September 16, 1910—Dr. Maxwell Adams, "Our Heritage."

September 30, 1910—Professor George J. Young, "Some Personal Experiences Among the German Mines."

November 9, 1910—Dr. George R. Parkin, of London, England. Subject: "The Rhodes Scholarship Trust."

November 18, 1910—Miss Goodwin Doten. Subject: "Some Impressions of the East as Gained by a Visit to the National Educational Association in Boston."

December 9, 1910—Honorable Frank B. Mayers. Subject: "Athletics."

SECOND SEMESTER, 1910–1911

February 11, 1911—Hon. Samuel W. Belford of East Ely, Nevada. Subject: "The Character and Public Services of Abraham Lincoln." Brief addresses on Lincoln by Governor Tasker L. Oddie, Lieutenant-Governor Gilbert C. Ross, Honorable Clay Tallman, Honorable August Frohlich, and Honorable A. A. Codd.

March 10, 1911—Gale Seaman, Pacific Coast Secretary of the Young Men's Christian Association of Los Angeles, and W. A. DeWitt, General Secretary of the Young Men's Christian Association of the University of California, made brief addresses to the students.

March 8, 1911—Ex-Governor Joseph W. Folk of Missouri. Subject: "Good Citizenship."

April 3, 1911—Colonel Theodore Roosevelt. Subject: "The Duty of College Men and Women to Society and the State."

ORGANIZATION AND ADMINISTRATION

FOUNDATION

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko by a law approved March 7, 1873, but was moved to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University began with the academic year 1886–87.

The State Normal was authorized by an Act of the Legislature approved February 7, 1887, and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS

The University maintains the following Colleges and Schools, which aim to meet the best ideals of modern university life and training:

I. The College of Arts and Science.

II. The College of Agriculture:
 1. The School of Agriculture.
 2. The School of Domestic Science.

III. The College of Engineering:
 1. The Mackay School of Mines.
 2. The School of Mechanical Engineering.
 3. The School of Civil Engineering.

IV. The College of Education.

REGENTS

The general management and control of the University is vested in a Board of Regents. The five members constituting this board are elected by the people.

THE PRESIDENT

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be Chairman of the Academic Council and of the Executive Committee of the Academic Council, and ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, subject to the approval of the Academic Council and Board of Regents, appoint the Executive and other standing committees designated as administrative and as academic and shall name the chairman of such committees.

THE VICE-PRESIDENT

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE REGISTRAR

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the student and the administrative and academic committees.

He shall prepare, subject to the approval of the President and the Executive Committee, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be secretary of the Council and shall keep a record of its proceedings.

He shall also be the University accountant.

THE ACADEMIC COUNCIL

The Academic Council consists of the President of the University, all professors and associate professors, the Registrar, the Librarian, such assistant professors as have been upon the rolls of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Regents, determine.

The Academic Council is vested with all of the powers and duties usually vested in the faculties of similar institutions.

All general University regulations, statutes, and rules as to the matters within the province of the Faculty, shall be initiated in and passed by the Academic Council, and shall be in force, subject to the power of disapproval in the Board of Regents and in the President of the University. However, no regulation, statute, or rule involving a change in the educational policy of the University in respect to the requirements of admission, the course of study, or the conditions of graduation, shall take effect as above until it has been submitted to the Board of Regents for their approval.

The Academic Council shall formulate the duties and control the policy of the several committees, excepting that appeals from the decisions of the several committees shall be made to the Executive Committee.

The Council shall recommend to the President of the University, and he to the Board of Regents, the candidates for graduation.

A majority of its members shall constitute a quorum of the Academic Council.

COMMITTEES

THE EXECUTIVE COMMITTEE

The Executive Committee shall consist of the President, the Vice-President, and five members of the Academic Council of the rank of Professor or Associate Professor. These members shall be appointed by the President of the University and approved by the Academic Council and the Board of Regents.

All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, and for the abolition of departments or chairs, shall be submitted by the President to the Executive Committee for approval before they may be submitted to the Board of Regents for its action.

In all cases, in presenting such matters to the Board of Regents, the President shall state whether or not they have the approval of the Executive Committee.

The Executive Committee shall advise the President concerning any other matters which he may choose to refer to it.

OTHER STANDING COMMITTEES

The other standing committees shall be grouped as follows:

Administrative—

1. Student Affairs
 - *a.* For Men
 - *b.* For Women
2. Athletics
3. Public Exercises
4. Literary Contests
5. Public Health
6. Delinquent Scholarship
7. Military Affairs

Academic—

1. Admission and Advanced Standing
2. Registration
3. Graduation and Theses
4. Schedule of Recitations and Examinations
5. University Publications
6. Library
7. Graduate Courses
8. Advisory Committee

Standing committees shall be appointed annually by the President, subject to the approval of the Executive Committee and the Board of Regents, and shall enter upon their duties the first of January of each year.

SPECIAL COMMITTEES

Special committees may be appointed by the President of the University, to which the Academic Council may assign the consideration of any matter within its jurisdiction.

THE COLLEGE FACULTIES

The College Faculties shall have the directing of the educational policies in their respective colleges, and shall recommend to the Academic Council changes in the requirements for admission, the course of study, and the conditions of graduation.

ADVANTAGES AND EQUIPMENT

ADVANTAGES OF SITUATION

Reno, the seat of the University, is a thriving community of fifteen thousand inhabitants. It is situated in the beautiful Truckee Valley, at the junction of three railroads, namely, the Southern Pacific Railroad, a trunk line between the East and the West; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railway. The imposing mountains which encircle the valley, the pure air and sunshine, give the town an enviable reputation for health and beauty. The numerous churches are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. The proximity of Reno to the famous Comstock Lode, the mines of Tonopah and Goldfield, and the copper mines of eastern Nevada, enable the School of Mines to offer a large amount of practical training in mining operations.

FUNDS

The endowments and appropriations on which the University has been founded and maintained are the following:

1. The donation of 21.15 acres of land by the Central Pacific Railroad, and the erection of a building in 1873–74 by the citizens of Elko at a cost of more than eighteen thousand dollars.

2. When the University was removed to Reno by an Act of the Legislature in 1885, the Board of County Commissioners of Washoe County paid to Elko County $20,000, and to the Board of Regents $5,000 to be expended in purchasing a site at Reno.

3. The fund derived from the Congressional Land Grant of July 2, 1862, the interest of which is included in the biennial appropriation.

4. Various appropriations by the State Legislature for buildings and other specified purposes.

5. The biennial appropriation by the State Legislature for the support of the University.

6. The Agricultural Experiment Station Funds, for dem-

onstration and research in Agriculture, of $30,000 a year; the Hatch Fund, $15,000; the Adams Fund, $15,000.

7. The Morrill College Fund of $45,000 a year for Agriculture and Mechanic Arts, apportioned to the College of Agriculture and the College of Engineering.

BUILDINGS AND GROUNDS

The University Campus has an area of forty-nine acres. It is beautifully located on an eminence overlooking the city. There are fourteen buildings now in use.

Morrill Hall is a three-story brick building with a large basement. The Library occupies the entire basement. The administrative offices of the President of the University and the Department of Mathematics occupy the first floor. The Departments of Ancient Languages and History occupy the second floor. The Commercial Department and the Department of Drawing occupy the third floor.

Stewart Hall is also a three-story and basement structure. In the basement are the rooms of the Department of Domestic Science and the office of the Superintendent of Buildings and Grounds. The first floor is occupied by the Educational, Modern Language, and English Departments. The second floor is devoted to the use of the University High School. The third floor is occupied by the Station Laboratory of the Botanical Department, and by the Department of Civil Engineering.

Hatch Station is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the Departments of Agriculture, Entomology, and Meteorology. The second floor is given to the Departments of Biology, Veterinary Science, Bacteriology, and the Hygienic Laboratory. The third floor is occupied as a general Biological Laboratory.

The Mackay Mining Building, the recent gift of Clarence H. Mackay, houses the Departments of Mining and Metallurgy, and of Geology and Mineralogy. It is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and a library occupy the space between the wings. The first floor contains the geological lecture room, office, and laboratory; the chemical laboratory, weighing rooms, library, and drafting room; the geological

museum, assaying laboratory, and metallurgical and mining laboratory. The second floor contains the mineralogical and research laboratories, mining lecture room and offices.

The ground floor of the Mechanical Building contains the machine shop, the blacksmith shop, and the boiler room. The machine shop is furnished with screw-cutting lathes, a polishing lathe, a shaper, a universal milling machine, a universal cutter grinder, bench vises, wet and dry emery wheels, alternating and direct-current dynamos, and a tool room equipped with small machine tools and experimental apparatus for the use of mechanical engineering students. The blacksmith shop has forges and the necessary tools. The second floor accommodates the wood-working shop. This shop is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools.

The proposed Electrical Building, for which an appropriation of $40,000 was made by the last session of the Legislature, is to be situated just north of the present Mechanical Building. The plan has been made with a view of securing harmony in this and all future buildings that are placed around the Mackay Quadrangle. The exterior of the Electrical Building is plain, yet attractive. The material of which it will be constructed is brick, with stone facings and trimmings. The roof will be either of tin or tile. The interior construction consists of laboratories for different kinds of electrical machinery, a gallery for facility in demonstration, a recitation room, a drafting room for the Department of Civil Engineering, and two offices.

The Department of Physics occupies a substantial two-story brick building. The first floor contains the laboratories, balance room, darkrooms, storeroom and shop. The second floor contains the lecture room, the apparatus room, and the offices.

The Chemistry Building is a two-story, gray stone building, standing on the west side of the quadrangle. On the first floor are found the inorganic, qualitative and quantitative laboratories, a balance room, stock room, and the professor's private laboratory, which is equipped for electro-chemical work. The qualitative laboratory accommodates sixty-five students, and the quantitative, which is also used as an organic laboratory, accommodates thirty-six students. Both labora-

tories are supplied with hoods, gas, water, steam-evaporating pans, compressed air, and direct-current electricity. The chemical laboratory of the Agricultural Experiment Station occupies the south half of the second floor. This laboratory has been wholly remodeled and equipped for organic research. It contains four working desks supplied with gas, water, and steam, commodious hoods, motor-driven centrifuge, vacuum and compressed-air systems, electric ovens, etc. Adjoining this laboratory is an office for the research chemist, and one for the food and drug chemist. The second floor also contains a lecture room accommodating seventy persons, a grinding room, two stock rooms, a darkroom for photographic and polarimetric work, an office, and a department library. The basement is divided into two compartments, one being used as a furnace and combustion room, the other as an acid room. There is need of an organic laboratory, a mechanical room and a distillation room. All the laboratories are heated by the central hot-water system.

The State Legislature, recognizing the importance of placing the benefits of the University within the reach of all the deserving young men and women of the State, authorized the building of two student halls, after the plan of such halls in use by students of the larger eastern colleges, and appropriated thirty-five thousand dollars for the purpose. The first of these two buildings is known as Lincoln Hall. It is a tasteful and comfortable home for one hundred young men. The plans of Lincoln Hall were drawn after a careful study of the best modern college halls, and meet every requirement of a cultivated taste.

The second building, known as Manzanita Hall, is a large brick building with granite facings. Within the past year, the building has been doubled in size and many improvements made, with the result that today it is one of the finest college dormitories in the West. In the new part the rooms are arranged in suits of two—a study and a bedroom. The bedroom contains two single beds, two attractive dressers of oak or birdseye maple, a small table, and chairs. Each bedroom has two large closets. The study has a bookcase, a big leather-covered study table, and comfortable chairs. There are a few suites of three rooms, with two big bedrooms for four girls, and some with one large and one small room for three girls. The woodwork in all the rooms is stained dark-brown, and the walls are a lighter, but subdued, shade of the same

color, toning in softly with the wood, making an admirable background for pictures and college pennants. There is a large recreation room, where the girls read and talk, play games, dance and sing, and a well-appointed drawing room, where the guests are received. The floors throughout the building are of maple. The building is well lighted, and comfortably heated from the central hot-water heating plant.

The Gymnasium is a modern structure 60 feet wide and 120 feet long. It is equipped both as an armory for the use of the Military Department and as a gymnasium for athletic training. The equipment is modern and ample for all college purposes. Convenient toilet rooms with hot and cold water and lockers for the use of all students are provided. The Gymnasium, on account of its convenience and size, is used as a hall for General Assembly and the more important University functions.

The home of the President is situated on the southeast corner of the Campus. It is colonial in the general style of its architecture and is a fine, commodious home, an ornament to the University. It was built at a cost of $9,418.70. The ground upon which the house is built was leased by the Regents of the University, but when the Legislature appropriates the money to pay for the cost of the building the house becomes the property of the University.

Between the Gymnasium and Lincoln Hall is situated the University Hospital. This is a one-story brick building and contains six rooms. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. Students may have any physician whom they prefer.

THE MACKAY FIELD

The natural ampitheater on the Campus, which had been leased to the University for a number of years by the late Regent Evans, was purchased for the University by Mr. Clarence H. Mackay and provision made for its improvement. In order to make room for other branches of athletics, such as basket-ball and tennis, the Nevada Legislature of 1909 made provision for the purchase of additional land to the south of the old field, so that now about ten acres of land is being used for athletic purposes. The improvements donated by Mr. Mackay include a Training Quarters Building, situated on the east side of the field. This building has showers, baths,

locker and dressing rooms, a committee room and a lounging room. Directly opposite to this on the west bank are the bleachers and colonnade. The natural slope of the bank has been utilized so that the field closely resembles the stadium used at the ancient Olympian games. There are seventeen tiers of concrete, with a colonnade for a covered grandstand in the rear. The seating capacity is about two thousand.

Situated between these structures is a full-sized Rugby football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard dash.

LIBRARIES AND LABORATORIES

The University Library is located in the basement of Morrill Hall. It contains twenty thousand bound volumes, and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works and reference volumes of various kinds. The books are catalogued according to the Dewey Decimal Classification System. The reading room is supplied with daily and weekly papers, and with many of the best scientific and literary periodicals. The library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. To the general public is extended the use of the library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students.

The Agricultural Experiment Station Library, of nearly two thousand bound volumes and a large number of pamphlets, is in the northern wing of Hatch Station. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, general works on agriculture and related sciences, and on irrigation, and herd books of livestock associations. Many current agricultural periodicals are on the tables in the reading room. The library is catalogued and classified, and suited for ready reference. It is open daily, and, while intended primarily for the use of the Station Staff, it is also accessible to the public.

Mining Library—All reference books, text-books, technical journals, and works pertaining to geology and mineralogy,

mining, metallurgy, and engineering are concentrated in one large study room which is conveniently located upon the ground floor of the building. This library is open at all times during the sessions.

Physical Laboratory—The work of the Physical Laboratory is carried on along four distinct lines, each with its separate rooms and its own special equipment. The general laboratory contains a laboratory for High-School Physics, with an equipment permitting a section of forty-eight students to work simultaneously on the same exercise; a Freshman and a Sophomore Laboratory for work in sound, light, magnetism, and electricity; and a shop. The equipment of the Freshman and Sophomore Laboratories, which is entirely new, consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the work. Aside from the main laboratories there is a separate room for experiments in heat; a weighing room, containing four Becker balances for general use; a darkroom; and a department library and reading room, which is also available for student use while writing up the laboratory exercises. The department shop contains a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular and linear dividing engine, and a direct-current dynamo with two armatures, furnishing current at various voltages. All of the laboratories are supplied with water, gas, and electricity.

Laboratory for Quantitative Analysis—This laboratory accommodates thirty-six students. It is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

Laboratory for Qualitative Analysis—This laboratory will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas, and fume closets.

Station Chemical Laboratory—In this laboratory those stu-

dents who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

General Biological Laboratory—During the past summer the biological laboratory was remodeled, enlarged and refurnished. There are thirty-five laboratory tables, each of which is provided with a microscope, reagent lockers, and six drawers fitted with combination locks. The tables have plate-glass tops, resting on rubber mats, so that they cannot be injured by stains or other chemicals. In addition to these there are a few operating tables with zinc tops, designed for operating demonstrations and dissections. The general equipment and supplies are kept in wall cases and cabinets, made of quarter-sawed oak and similar to the tables in design. The department now has thirty-seven first-class combined microscopes, four of which are equipped with high-power lenses and all other accessories for the most delicate and precise microscopical work. Among the larger and more expensive instruments are an electric incubator, a Lillie paraffine oven, an electric centrifuge, and sterilizer. An important adjunct to both the class and the laboratory work is a combined microscope and lantern-projection apparatus, which enables the instructor to project microscopic objects as well as photographic illustrations, magnifying up to 3,000 diameters, upon the screen, where it can be observed by the whole class at one time.

Histological and Embryological Laboratory—This laboratory is equipped with all the necessary apparatus for doing general or research work in these subjects.

Bacteriological Laboratory—This laboratory has also been recently fitted up with new apparatus for research in Pathology and Bacteriology. It is used chiefly for Experiment Station work, and for the work of the State Hygienic Laboratory, but is available for demonstration purposes for students taking elementary Bacteriology, and can accommodate a few students who desire to do more advanced work.

Station Botanical Laboratory—This laboratory is also used by advanced classes in Botany and Horticulture.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in Entomology. It contains also the Photographic Laboratory of the Experiment Station.

Geological and Mineralogical Laboratories—The Department of Geology and Mineralogy is provided with reference collections illustrating the minerals, rocks, and fossils, and with class collections for study and determination. The Mineralogical Laboratory is arranged, for the present, for the accommodation of single sections of forty students. There is, in addition, a laboratory fitted up for microsopic work, equipped with petrographical microscopes and the necessary accessories. It has also a set of mineral thin sections cut in definite direction, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. A separate grinding room is provided with apparatus for making thin sections of rocks and minerals. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides furnishes additional illustrative material for lecture work.

Chemical Laboratory of the Mackay School of Mines—The Chemical Laboratory is fully equipped with the usual desks, hoods, hot-plates, and air baths. Each desk is provided with gas, compressed air, and electricity. Steam connections are provided for drying-coils and still. Electric air-baths and drying-pans are provided for overnight work. A small electric-driven, five-jar, Abbe mill is in use for fine grinding tests. Four four-gallon slime agitators, driven by small electric motor, are used for slime tests. A direct-connected electric-driven exhaust fan draws the air from the hood in the parting room and from this laboratory. Next semester it is proposed to install a complete electrolytic outfit for lead, copper, and other determinations. This laboratory will accommodate sixteen students.

Weighing Room—Connected with both the Chemical Laboratory and the parting room is the weighing room. Substantial piers carry the balances. Both chemical and bead balances for assaying work are placed in this room. The equipment consists of two analytical balances and seven bead balances. Different makes of balances are in use, such as the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger.

Parting Room—The cleaning of beads, parting, and ignitions are provided for in a separate room, convenient to the weighing room and Assaying Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

Assaying Laboratory—The preparation of crucible charges and all furnace work is done in the Assaying Laboratory. This laboratory is equipped with six Thompson pulp scales, three double-muffle soft-coal furnaces, three large oil fusion furnaces, four small oil-fired muffles, two coke muffle furnaces, and one coke fusion furnace. Crude oil and distillate are used for the oil furnaces, compressed air being used to spray the oil. The laboratory will accommodate twenty students.

Metallurgical and Mining Laboratory—The metallurgical equipment includes the following machinery, all of commercial size: a three-stamp battery and feeder, amalgamating plates on steel table, a four-foot Union concentrator, a Wilfley concentrating table, a two-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of one-ton capacity, a 3x8 roasting furnace, an eighteen-inch amalgamating pan, a sample crusher, and sample grinder.

The mining machinery equipment consists of an Ingersoll-Sargent drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any mesh coarser than a 40 screen; coarse and fine concentrations of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls—the roasting furnace enabling ores to be given a chloridizing or an oxidizing roasting before treatment in the vats—and, finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-h. p. and a 5-h. p. induction motor drive all the machinery through separate line shafts.

Steam and Gas Laboratory—The equipment includes four steam engines, two gas engines, five steam-engine indicators, two gas-engine indicators, Alden dynamometer, planimeters, speed indicators, gages, Crosby gage-tester, calorimeter, gas analysis outfit, pyrometer, and other pieces of apparatus essential in making tests on steam and gas machinery.

Electrical Laboratory—The equipment consists of six

direct and four alternating-current generators, four direct and ten alternating-current motors, ten transformers, one Queen portable testing set, twelve voltmeters, ten ammeters, nine wattmeters, three multipliers, rheostats, and numerous other smaller pieces of apparatus.

Civil Engineering Laboratory—During 1909 a 200,000-pound capacity Riehle testing machine was purchased and installed for the testing of materials and to illustrate to the students of engineering the principles of the strength and elasticity of materials used in engineering work. This machine is automatic and autographic and modern in every respect.

SCIENTIFIC COLLECTIONS

The northwest wing of the Mackay Building is devoted to a museum, in which the collections of the departments connected with the School of Mines are housed and exhibited. Besides general material, these include collections illustrating the mineral resources of the State of Nevada, the geology of several of its mining camps, and systematic collections of rocks, minerals and ores. In addition the nucleus of collections illustrating the different types of mining machinery and appliances and the treatments of ores have been installed. The collections are being built up and enlarged as rapidly as possible and are being arranged and labeled so as to furnish all information possible to the general public as well as to the students. During the year the museum has received much additional material, especially from the Mining Congress at Goldfield, the Cole collection presented by Mr. Mackay, and the loan collection of the rocks and ores of Goldfield loaned by the United States Geological Survey.

NEEDS OF THE UNIVERSITY

1. Among other University needs is a library and administration building, to cost with furnishings $250,000. The present space allotted to the Library, the basement of Morrill Hall, is inadequate. New books are rapidly accumulating, and during the last two years seven new book-stacks have been required. It is difficult to see where any more stacks can be placed in the present stackroom to meet the needs of the constant growth. Hence a new and larger abode for the Library is needed. Moreover, there should be a building especially designed and adapted to the needs of a library, prominent among which is a sufficient amount of light, which

is not obtained in the basement. The book-stacks are necessarily large, and hence shut off the light from the windows, the Librarian frequently being obliged to use the light of a match in order to find a book. The new Library building should provide for the admission of light from above, through skylights, which would insure the diffusion of a good light throughout the Library. Another fact contributing to the need of a new building is the danger of fire in the present library. If the books were burned, some of them could not be replaced.

2. A biological building and museum for the use of the Department of Biology, the museum wing of this building to be used for scientific collections in natural history so that they can be made available to students and to the public.

3. Scholarships. The friends of education, and particularly the friends of the University, are urged to consider the foundation of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a university course, but whose financial resources are inadequate to obtain it for them. The University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands made upon it. No means of perpetuating a healthful and elevating influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the growing centuries.

4. An endowment of professorships in the University. The sum of $50,000 will provide an adequate endowment for a chair in the University, the interest of this endowment fund going to pay the salary of the professor of the special department.

LECTURES AND FACULTY ASSOCIATIONS

PUBLIC LECTURES

GENERAL ASSEMBLY

A general assembly of all students of the University and all the members of the Faculty is held every Friday. This is the lecture service of the week, and is under the special direction of the President of the University. These weekly lectures are given by members of the Faculty and by men and women of special eminence in particular fields of study, travel, and business enterprise.

UNIVERSITY EXTENSION LECTURES

Lectures on various subjects by members of the Faculty of the University and Staff of the Agricultural Experiment Station will be given at different points in the State as arrangements can be made between the local communities and the University.

THE UNIVERSITY SCIENTIFIC ASSOCIATION

The University Scientific Association is an organization of those members of the Faculty who are interested in scientific research. The purpose of the organization is to broaden the outlook and to come in touch with scientific progress outside of one's own sphere of activity. Biweekly meetings are held in the lecture room of the Mackay Building. Reports are presented and discussed at each meeting. The subjects of the reports are either the result of individual research, or articles of general interest that have recently appeared in the scientific journals. The meetings are open to visitors. Advanced students find the meetings of considerable value.

SCHOLARSHIPS AND PRIZES

The following annual scholarships and prizes have been given for the purpose of assisting deserving students and rewarding excellence in scholarship.

1. The F. O. Norton Scholarship of fifty dollars to the most deserving student in the Mackay School of Mines.

2. A scholarship of one hundred dollars from a friend of the University to the most deserving male student in the University exclusive of the Mackay School of Mines.

3. Five Regents' Scholarships of fifty dollars each to students who show in highest degree the general qualities which go to make successful men and women. These scholarships are apportioned as follows: one to the most deserving student in the University High School; one to the most deserving student in the College of Education; three to the most deserving students in the other colleges of the University.

4. The Philo C. Bennett prizes, two of fifty dollars or four of twenty-five dollars each, for the best essay or essays on the principles of free government.

In addition to the above is a gold medal awarded annually to the member of the graduating class who has attained the highest average grade in scholarship throughout his or her college course.

THE RHODES SCHOLARSHIPS

Special attention is called to the Rhodes Scholarships in Oxford University, England, to which one appointment from the State of Nevada will be made for each of the years 1913, 1914, 1916, 1917, and so on, omitting every third year. The Scholarships are each of the value of approximately $1,500 a year, and are tenable for three years.

Scholars will be selected from candidates who shall have passed a qualifying examination in Latin, Greek, and Mathematics. If necessary, Greek may be temporarily postponed, but only those candidates who have passed in at least Latin and Mathematics will be eligible for a Scholarship. Examinations are usually set in the month of October preceding the year for which each appointment is made. Any person who has passed the examination once will be eligible for election

at any subsequent time if he satisfies the other conditions of eligibility.

In addition to the requirements of the qualifying examinations, a candidate to be eligible for election from the State of Nevada must—

(1) Be born a citizen of the United States and be unmarried.

(2) Be a student in or a graduate of the University of Nevada, or, if a student in some other university or college, a resident of the State of Nevada.

(3) By the first of October of the year for which he is elected have passed his nineteenth and not have passed his twenty-fifth birthday.

(4) By the first of October of the year for which he is elected have completed at least his Sophomore year in the University of Nevada or in some other recognized degree-granting university or college of the United States.

The appointments thus far made to Rhodes Scholarships from the State of Nevada are as follows:

1907—ARTHUR LEONIDAS ST. CLAIR, Deeth, Nevada.

1908—WILLIAM SCOTT UNSWORTH, Reno, Nevada.

1910—STANLEY MAYHEW WILTON, Goldfield, Nevada.

1911—CEDRIC HARDING BEEBE, Reno, Nevada.

The Rhodes Scholarships offer an unusual opportunity both for a university education in the Liberal Arts, the Sciences, Engineering, or the professions of Jurisprudence or Theology, and for travel among the chief centers of life and activity in foreign lands. These advantages, with the gift of financial means ample for their enjoyment, have made these Scholarships the most attractive ever established.

Further information about Oxford and the Rhodes Scholarships may be secured by addressing President J. E. Stubbs, Chairman of the Committee of Selection for the State of Nevada, University of Nevada, or the Secretary of the Committee, Rev. Samuel Unsworth, Reno, Nevada.

STUDENT AFFAIRS

GOVERNMENT OF THE STUDENTS

In the government of the University the largest liberty consistent with good work, good order, and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of University life are advised to remain at home or go elsewhere.

STUDENT ORGANIZATIONS AND PERIODICALS

The students have established fraternities, literary societies, the Crucible Club for engineering students, a Young Women's Christian Association, and the Associated Students, who direct athletics and debating and promote concert of action on the part of the students.

The students publish a weekly newspaper known as *The U. of N. Sagebrush.* Each Junior class publishes an edition of the Junior Annual known as the *Artemisia.*

ATHLETICS

The University is provided with an excellent gymnasium, and two instructors, one for the men and the other for the women, are in charge of the Department of Physical Training.

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. Rugby football, baseball, track, basket-ball, and tennis are the games of special prominence at the present time. The policy of the University is to foster the spirit of honor and manliness in athletics, to sup-

press evil tendencies, and to see to it that athletic sports do not encroach upon the claims of scholarship.

To represent the University of Nevada in any public contest, a student must conform to the following rules:

SECTION I

RULE 1. He must be an amateur.

RULE 2. If a candidate for a degree, he must attend regularly all the exercises of his class.

RULE 3. If a special student, he must give evidence of good faith regarding his intention to remain a full year in the University. He must also take courses amounting to not less than fifteen hours a week and attend regularly exercises in such courses.

RULE 4. Like other students, he must maintain satisfactory standing in his class. A student who does not maintain a satisfactory standing in one school of the University cannot, by entering another, alter his status as regards these rules.

RULE 5. He must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

RULE 6. He must pass a physical examination satisfactory to the Committee on Athletics.

SECTION II

RULE 1. Schedules for all games must be submitted to the Faculty Committee on Athletics and approved by them.

RULE 2. A similar approval is required in the case of every individual intending to represent the University of Nevada in any single contest.

MILITARY SCIENCE AND TACTICS

1. Appreciation of the advantages of military drill and training in the education of the youth, is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, and instils habits of obedience to lawful authority. A general knowledge of the system of national defense, of the organization of the Army and of the Navy, and their relation to the civil power, is considered essential to intelligent suffrage.

2. The department is in charge of an officer of the United States Army, detailed by the War Department as Professor of Military Science and Tactics, and as Commandant of Cadets.

3. Students receiving military instruction are designated "Cadets," and are organized into a battalion of infantry, officially designated as "The University of Nevada Battalion of Cadets."

4. The Battalion of Cadets is composed of all male students of the University, including those in the Preparatory, Commercial, Normal, and Special classes, with the following exceptions:

a. Students physically disqualified permanently. Those temporarily disqualified may be given light duty in the Signal Corps Department.

b. Students twenty-seven years of age or over.

c. Students who previously have had the military training required by the War Department.

d. The Battalion has its band. The students serving in this band are excused from other military duties. Ordinarily no cadet will be assigned to the band until he has satisfactorily completed the "schools of the squad, soldier, and company."

5. Cadets are required, upon entrance, to provide themselves with a uniform of prescribed design, consisting of blouse, trousers, cap, black shoes, white gloves, together with the insignia appropriate thereto.

6. Cadets will wear the uniform at all times while receiving military instruction.

7. The wearing of composite uniform is prohibited, except

that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

8. Appointments in the Battalion will be determined by:
 a. Military ability, which shall be decided from a careful consideration of the following points:
 1. Character.
 2. Attendance.
 3. Military conduct.
 4. Zeal.
 5. Soldierly bearing.
 6. Aptitude for command.
 7. Knowledge of drill and other duties as determined by examination and practical application.
 8. Recommendation of superior officers.
 9. Standing in Department of Physical Culture.
 b. Class standing.
 c. Length of service in the Battalion.

Generally the commissioned officers are taken from the Senior class, the sergeants from the Junior class, the corporals from the Sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

10. Every cadet who is a candidate for graduation from any of the schools of the University will be required to complete the prescribed course of military instruction, aggregating 14 units. Other cadets will receive an amount of military training proportionate to the length of their attendance at the University.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military service will be forwarded to the War Department and to the Adjutant-General of the State.

13. The punishments to which cadets are liable are:
 a. Suspension of privileges. Private reprimand.
 b. Suspension from the University. Reduction to ranks.
 c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Commandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensable to discipline. Military authority will be exercised at all times, with firmness, kindness, and justice; superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to perform the prescribed military duties unless excused in advance by the President or the Commandant. In case of absence without previous excuse, a written explanation will be submitted upon resuming duty. In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to all of the University schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; provided, they are at least twenty years of age. The Committee on Admission and Advanced Standing may grant exceptions to this rule for adequate reasons. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it is able to complete satisfactorily.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admis-

sion and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high-school teachers and members of the Faculty concerned with accrediting will be held each year on the day preceding the Academic meet.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1. English (a)	1
English (b)	1
English (c)	1
English (d)	1
2. Algebra, Elementary (a)	1
Plane Geometry (b)	1
Advanced Algebra (c)	1
Solid Geometry (d)	½
Plain Trigonometry (e)	½
3. Physics	1
4. English History (a)	1
Ancient History (b)	1
Medieval and Modern History (c)	1
American History and Civics (d)	1
5. Latin (a)	1
Latin (b)	1
Latin (c)	1
Latin (d)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1
11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1
18. Agriculture	½ or 1
19. Manual Training	½

For entrance to all colleges the candidates must present English a and b; Mathematics a and b; and 11 additional units, to be distributed in the various colleges as follows:

1. In the College of Arts and Sciences, and College of Education:
 a. Division I: Latin 4 units, elective, 7 units.
 b. Division II: Language other than English, 2 units; History, 2 units; elective, 7 units.
 c. Division III: Mathematics c; Language other than English, 2 units; Science, 1 unit; elective, 7 units.
2. In the College of Agriculture:
 Language other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units; elective 8 units.[2]
3. In the College of Engineering:
 Language other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units (one unit, however, must represent advanced work); Mathematics c, d, and e, 2 units; elective, 6 units.[3]

[1] This requirement will go into effect August 1, 1914.

[2] August 1, 1914, these units will be reduced to 6.

[3] August 1, 1914, these units will be reduced to 4.

DESCRIPTION OF ADMISSION REQUIREMENTS

1. ENGLISH (4 units)

The requirement in English includes both the study of the literature listed in Groups I–V and the work in grammar, composition, and rhetoric outlined below.

LITERATURE

I. Ivanhoe, Silas Marner, and the Vicar of Wakefield, or Henry Esmond; and, for outside reading, any six of the following: The Talisman, The Three Musketeers, Treasure Island, The Last of the Mohicans, The Jungle Book, Quentin Durward, Rob Roy, The House of the Seven Gables, The Tale of Two Cities, Lorna Doone, Emma, Oliver Twist, The Christmas Carol, Pilgrim's Progress, With Fire and Sword, The Cloister and the Hearth, the Newcomes, Les Misérables, The Crisis, The Virginian.

II. The Merchant of Venice, Julius Cæsar, Macbeth.

III. The Vision of Sir Launfal, The Chambered Nautilus, Thanatopsis, The Deserted Village, The Cotter's Saturday Night, Gray's Elegy, The Ancient Mariner, L'Allegro, Il Penseroso, Gareth and Lynette, or the Passing of Arthur, The Princess, and any two of the following: Michael, The Rape of the Lock, Childe Harold, Canto IV, Chaucer's Prologue, Lays of Ancient Rome; selections from Wordsworth, Shelley, Keats, and Arnold.

IV. The Alhambra, The Great Stone Face, The Ambitious Guest, The Gold Bug, The Purloined Letter; and, for outside reading, any two of the following: Hamlin Garland's Main Traveled Roads; Bret Harte's The Luck of Roaring Camp; London's The Call of the Wild; Kipling's The Day's Work; Maupassant's The Coward, The Piece of String, The Necklace; The Book of Ruth.

V. Franklin's Autobiography, or Thoreau's Wild Apples; Addison's Sir Roger de Coverly, or Carlyle's Essay on Burns, or Holmes's Autocrat of the Breakfast Table; Burke's Speech on Conciliation, or Webster's Bunker Hill Oration.

GRAMMAR, COMPOSITION, AND RHETORIC

The aim of the course should be to train in correct expression and effective presentation of simple exercises in description, narration, and exposition. A simple text-book in rhetoric should be used. An amount of grammar should be required sufficient to insure correct expression.

2. MATHEMATICS (4 units)

(*a*) Alegbra (1 unit). Addition, subtraction, division and multiplication of algebraic expressions; simple equations; simple simultaneous equations of two or three unknowns; factoring; graphs; fractions; ratio and proportion; highest common divisor and least common multiples by the factor method; square root; radicals and fractional exponents simply treated; elementary treatment of quadratic equations.

(*b*) Plane Geometry (1 unit). Rectilinear figures; the triangle; parallel lines; the quadrilateral; polygon; circle; ratio and proportion; similar polygons; area of polygons and the circle.

(*c*) Advanced Algebra (1 unit). Review of elementary algebra; quadratic equations; simultaneous quadratic equations; exponents and radicals; binomial theorem; logarithms; determinants; mathematical induction; progression and other forms of series; theory of equations.

(*d*) Solid Geometry (½ unit). Lines and planes; dihedral and polyhedral angles; polyhedrons; prisms; pyramids; similar and regular polyhedrons; cylinder, cone; sphere; similar solids; mensuration of solid figures.

(*e*) Trigonometry (½ unit). The development of the general formulæ of plane trigonometry with application to the solutions of plane triangles and the measurement of heights and distances. When possible about two weeks should be spent on spherical trigonometry.

3. PHYSICS (1 unit)

The requirement represents at least a daily exercise during one school year, which falls within the last two years of preparation for college. The course should cover the amount of material offered in any of the best modern text-books of Elementary Physics, such as Carhart and Chute's High School Physics, or the First Course in Physics by Millikan and Gale. The instruction should be based upon laboratory work by the student, performed under the teacher's supervision, and classroom demonstration by the teacher. The student's laboratory note-book should be presented to the Department of Physics at time of entrance.

4. HISTORY (3 units)

(*a*) English History (1 unit). A knowledge of the important epochs is required. Larned's History of England indi-

cates approximately the ground to be covered. The main purpose of the requirement is to prepare for the intelligent study of English literature, therefore constant reference should be made to the literary development of the English people.

(*b*) Ancient History (1 unit). This includes: The Beginnings of Civilization, or the early Oriental Theocracies; Greece and Macedonia; Rome to the time of Charlemagne. The amount required is indicated by West's Ancient History, or Wolfson's Essentials of Ancient History.

(*c*) American History and Civics (1 unit). A knowledge of the outline of American History, and of the nature of federal, state, and local government. The requirement represents three things; the amount of material offered in a text-book in history, such as Channing's Student's History of the United States, a text-book in government such as Hinsdale's American Government, or Bryce's American Commonwealth (abr. ed.), or their equivalent, and systematic reading of assigned references, which should be summarized in a note-book.

5. LATIN (4 units)

a (1 unit). Collar and Daniell's First Latin Book, with the exception of the Colloquia, Collar's New Gradatim, and D'Ooge's Colloquia Latina, pp. 1–31, the exercises in the latter to be read only at sight, represent the nature and amount of preparation required.

b (1 unit). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1–220, with prose composition, or an equivalent.

c (1 unit). Kelsey's Selections from Ovid, and Gayley's Classic Myths. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

(*d*) Vergil (1 unit). Vergil's Æneid, Books I–VI. Emphasis should be laid upon the development of student's power to understand Latin prose and poetry in the original, and upon the thought of the authors read rather than upon the syntax. The writing in Latin of connected English sentences. In this prose work the emphasis should be laid upon the order of words, the simpler features of sentence structure and means of connecting sentences in paragraphs.

a (1 unit). Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences in Attic Greek. White's First Greek Book represents the amount of preparation required.

b (1 unit). Xenophon's Anabasis, Books I–IV, with questions on the forms, syntax, and subject-matter. The translation into Attic Greek of simple passages of connected narrative based on the Anabasis. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

7. GERMAN (2 units)

a (1 unit). A thorough knowledge of the principles of German grammar. This includes the conjugation of weak and strong verbs, and of the modal and time auxiliaries; the declension of nouns, pronouns, articles, and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

b (1 unit). Reading and translation of the following texts or equivalents: Schiller's Maria Stuart, Modern Prose and Poetry.

6. GREEK (2 units)

The work in German composition should be continued through the second year. Harris's German Composition is recommended.

8. FRENCH (2 units)

a (1 unit). The ability to read at sight easy French prose, to translate correctly simple English sentences into French, familiarity with all the common idioms of the language, a thorough and accurate knowledge of the principles of French grammar. Rollins's or Super's French Reader indicates the amount of material to be read. The requirements in grammar involve: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminines of adjectives, the plurals of nouns and

adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite articles (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work the student may use Chardenal's Complete French Course; later, Fraser and Squair's Grammar is recommended.

b (1 unit). The translation into English of the following texts or their equivalents: Le Voyage de M. Perrichon, by Labiche and Martin; About's Le Roi des Montagnes; Daudet's Le Petit Chose; de Banville's Gringoire; Meilhac and Halévy's L'Ete de Saint Martin; Coppée's Le Luthier de Crémone; Le Tresor.

9. SPANISH (2 units)

a (1 unit). For the first year in Spanish, Ramsey's, Hill's and Ford's, Knapp's, or Garner's Spanish Grammar may be used. Selections from Matzke's Spanish Reader, from Knapp's, or from an equivalent text, are to be read.

b (1 unit). For the second year Galdos's Marianella, Partir a Tiempo, Electra, El Pajaro Verde, and selections from Don Quixote, or equivalent texts, should be read.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry, or Hessler and Smith's Essentials of Chemistry, and an amount of laboratory work equivalent to that outlined in the Manuals which accompany these texts, should be completed. Emphasis should be placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY (½ or 1 unit)

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced.

12. BOTANY (1 unit)

One-half unit will be allowed to any high-school student who has an intelligent knowledge of Andrews's Botany All the Year Round, from page 1 to 233. (American Book Company.) $1.

For one unit the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pp. 289 to 293.

13. ZOOLOGY (1 unit)

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's Introduction to Zoology (The MacMillan Company, New York). Merril's Studies in Zoology (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoology at the time of entrance.

14. PHYSIOLOGY (1 unit)

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work. A microscope and prepared slides of human or animal tissues are necessities. Martin's Human Body (Briefer Course), Hewe's High School Physiology, and Macy and Norris's Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING (½ unit)

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales and cash books, etc., and should include thorough understanding of checks, notes,

drafts, billing, and, generally, of all the papers used in modern business.

16. SHOPWORK (1 unit)

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than one unit for such work.

17. DRAWING (½ unit)

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

18. AGRICULTURE (½ or 1 unit)

19. MANUAL TRAINING (½ unit)

12. BOTANY (1 unit)

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18. AGRICULTURE (½ or 1 unit)

19. MANUAL TRAINING (½ unit)

GENERAL INFORMATION

EXPENSES OF STUDENTS

The railways of the State are generously cooperating with the Regents of the University by giving reduced rates to students when traveling to and from the University. The Southern Pacific Company, the Nevada Northern, the Las Vegas and Tonopah, the Nevada Central, and the Eureka and Palisade railroads will sell tickets to students at one-half the usual local rate. To obtain the benefit of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

All text-books used in the University may be purchased at any one of the bookstores in Reno at a price which covers the actual cost of purchasing and a profit to the dealer of from ten to fifteen per cent for handling.

The maintenance of its large and valuable laboratories is a constant and heavy expense to the University. It is impossible for the Regents to provide material in these laboratories free of all expense to the students. For this reason the Regents have established the following moderate charges for the material actually used:

For General Chemistry, per semester	$2.50
For Qualitative Chemistry, per semester	2.50
For Quantitative Chemistry, per semester	2.50
For Agricultural Chemistry, per semester	2.50
For Mineralogy, per semester	2.50
For Junior Assaying, first semester	5.00
For Junior Assaying, second semester	7.50
For Senior Metallurgy, per semester	10.00
For Typewriting, per semester	1.00
For Zoology 1, 23, each, per semester	1.00
For Botany 1, 2, 3, 24, 25, 26, each, semester	1.00
For Zoology 2, 24, 40, each, per semester	2.00
For Hygiene 1 and 2, each, per semester	2.00
For Sewing, per semester	1.00
For Cooking, per semester	1.00

For Botany 40, per semester.....$2.00
For Shopwork, per semester..... 2.00
For Physics 1 (Freshman), per semester..... 1.00
For Physics 3 (Sophomore), per semester..... 2.00
For Physics 21, per semester..... 2.00
For Physics 40 (each laboratory period per week), per semester..... 1.00
For History Syllabus, University, per semester.. 1.00

The following deposit fees will be required of students in the department to which the subject belongs, but will be returned to the student at the end of the semester, less the amount of breakage of or damage to material given:

For General Chemistry, per semester.....$5.00
For Optical Mineralogy, per semester..... 5.00
For Geology 23b, per semester..... 5.00
For Mineralogy 25, per semester..... 5.00
For Mineralogy 5, per semester..... 5.00
For Surveying (C. E. 1), per semester..... 5.00
For Railroad Surveying (C. E. 25), first sem... 5.00
For Physics 1, per semester..... 5.00
For Physics 3, per semester..... 5.00
For Physics 21, per semester..... 5.00
For Physics 40, per semester..... 5.00
For Biology, one-half or more courses..... 2.00

A fee of $4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basket-ball, base-ball, and track athletics, and debating. In return for the payment of this fee the student receives free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

MANZANITA HALL is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. The ventilation, heating, lighting and the furnishing of the rooms, are of the very best. Young ladies coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6 feet, to put on

mattress; 6 good towels; 2 large aprons for work in shop and in laboratory; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

LINCOLN HALL is the College home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Richard Brown. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow slips, 20 by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

Rooms in private houses can be rented for $10 to $15 per month.

TABLE BOARD—For the accommodation of the students, the President of the University maintains a dining hall in commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and service have been recently reorganized with a view to securing board and table service of the most acceptable character. The price of table board for the coming year will be $16 a month, payable in advance. If the board is not paid until after the fifteenth of the month an additional charge will be made of twenty-five cents a day until the account is settled. If the bill is not paid by the last day of the month, the privileges of the dining hall will be denied until the bill has been paid. *No deviation will be made from the above regulations.* After the expenses of the dining hall have been fully met, any surplus is paid over to the Board of Regents to pay for service rendered in maintaining Manzanita and Lincoln Halls.

Table board can be obtained elsewhere at from $25 to $30 per month.

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES

	Low	*Moderate*	*Liberal*
Tuition	None	None	None
Board, 36 weeks	$144	$144	$250
Room, light, and fuel	18	18	72
Washing and sundries	20	30	40
Text-books and stationery	6	12	18
Laboratory and athletic fees	8	10	12
Totals	$196	$214	$392

AID TO STUDENTS

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework, and dining-hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

A few annual scholarships have been given for the purpose of assisting deserving students. These have been described in detail on pages 47–48.

MATRICULATION

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credential or

examination he is given an admission card by the Registrar. This card must be presented to the Librarian before any books can be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION

METHOD OF REGISTERING

1. On registration day the student secures from the Registrar a student registration blank, upon which his studies for the semester are to be entered and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major and minor professors as advisers.

4. The signature of each instructor must be obtained for the courses registered in before the card is deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration, stamped by the Registrar. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

CLASSIFICATION OF STUDENTS

In registering, a student shall give his status as *Regular, Limited, Partial, or Special*, according to the rules following.

1. For "Regular" Freshman standing, a student must be accredited in all the required Preparatory work; or his entrance deficiencies must not exceed one high-school unit, and such deficiencies must be made good by the end of the Sophomore year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having two units of entrance deficiencies may register as a "Limited" Freshman, but these deficiencies must take precedence over all other work registered for. Unless a student is taking a majority of his work in the University, he shall be classified as a University High School student.

4. A "Limited" Sophomore, Junior, or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and departmental permission.

ENROLLMENT

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical culture. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the Committee on Registration and of the department concerned.

3. All courses finally enrolled in shall be completed. In case a course is elective, however, with the permission of the Registration Committee and the department concerned, a student may drop the course any time during the first twelve

weeks of the semester, and the course will be canceled from his record.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

CONDITIONS AND FAILURES

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registrar's office and may subject the student to admonition, suspension, or dismissal. A student whose work is unsatisfactory may be placed on probation, and may be required to withdraw at any time thereafter if satisfactory improvement is not shown. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time, should obtain leave of absence from the Committee on Scholarship.

Each instructor will determine the final grade of students by any method that he may consider best adapted to his courses.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department.

3. Only one reexamination may be given for the removal of any condition. The regular time for such reexamination shall be the beginning of the college year.

4. Any condition not removed by the time the course is next repeated becomes a failure and is subject to the rules for failures; but, in case of special students, the Committee on Registration may grant exemption from this rule.

5. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the condition within the prescribed time shall be considered as having failed.

NOTE:—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

6. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Academic Council shall by vote permit an extension of time or the substitution of another course.

7. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration Committee.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of their respective Colleges or Schools, and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

GRADUATION

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school or college are required. Credit is given for work done in other institutions of similar rank and character.

To students with an average of 90 per cent, or over, in all of the work required for graduation the degree "With Honor" will be given.

THESIS REQUIREMENTS

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific and literary knowledge, and good arrangement, and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the

Committee on Graduation and Theses not later than the first Monday in November, and all theses should be completed and presented to the Committee on Theses on or before the first day of the final examinations in May.

The thesis should be typewritten upon 8½x11 paper and bound in a 9x11¼ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS
SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE IN CANDIDACY FOR THE DEGREE OF BACHELOR OF ARTS

(Department of History)

By
JOHN EDWARD SMITH
Reno, Nevada
1908

DIPLOMAS AND BACCALAUREATE DEGREES

1. The Degree of Bachelor of Arts in conferred upon students who have completed in a satisfactory manner the four years' work of the College of Arts and Science.

2. The Degree of Bachelor of Science in conferred upon students who have completed in a satisfactory manner the four years' work of the College of Agriculture, the College of Engineering, or the College of Education.

3. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of High-School Grade, is awarded to students who have completed in a satisfactory manner the four years' work of the Advanced Course of the College of Education.

4. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded to stu-

dents who have completed in a satisfactory manner the work of the Elementary Course of the College of Education.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Studies the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except within the approval of the major professor or professors and the Committee on Graduate Study.

A thesis will constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing, but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Studies may appoint. In case semester examinations are taken, the grade received will be averaged with the oral examination and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science, upon those who have received

either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

DEGREES OF MINING, MECHANICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Studies and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

COLLEGE OF ARTS AND SCIENCE

FACULTY

JOSEPH EDWARD STUBBS.....President
ROBERT LEWERS.....Vice-President, Professor of Elementary and International Law
JAMES EDWARD CHURCH, JR.....Professor of the Latin Language and Literature
LAURA DE LAGUNA.....Professor of the Romanic Languages
JEANNE ELIZABETH WIER.....Professor of History
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY[1].....Professor of Botany and Horticulture
ROMANZO ADAMS.....Acting Professor of Economics and Professor of Education and Sociology
W. S. TANGIER SMITH.....Professor of Geology and Mineralogy
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
LOWE ABEEL MCCLURE.....Professor of Military Science and Tactics and Instructor in Physical Education for Men
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
JOHN CALVIN WATSON.....Professor of Greek
GEORGE ORDAHL.....Professor of Psychology and Education
KATE BARDENWERPER.....Assistant Professor of Domestic Science
SANFORD CROSBY DINSMORE.....Assistant Professor of Agricultural Chemistry
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GUSTAVUS SWIFT PAINE.....Instructor in English
HELEN ANN MEIGHAN.....Instructor in Physical Education for Women
CARL SAWVELL[2].....Instructor in Vocal Music
CHARLES LEROY BROWN.....Assistant in Biology
WALTER ANDERSON.....Assistant in Chemistry
NELLIE GODBOLT.....Assistant in History
AUGUST HOLMES.....Student Assistant in Mathematics

[1] Absent on leave, 1910–11.
[2] Resigned, June 1, 1911.

AIM

The aim of the College of Arts and Science is twofold:

1. To lay a foundation for the professions, both learned and technical, and

2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

CONDITIONS OF ADMISSION

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the university must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing in consultation with the adviser, may make exceptions to this rule.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

2.	Algebra, elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to the College of Arts and Science, the candidates must present English a and b; Mathematics a and b; and 11 additional units which may be distributed according to the major division selected in the Junior College Course. The specific requirements of the individual divisions are as follows:

Division I—Latin, 4 units; elective, 7 units.

Division II—Language other than English, 2 units; History, 2 units; elective, 7 units.

Division III—Mathematics c; Language other than English, 2 units; Science, 1 unit; elective, 7 units.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of their respective Colleges or Schools, and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE

The Degree of Bachelor of Arts is conferred upon students in the College of Arts and Science who have satisfactorily completed, in addition to the requirements of Military Science or Physical Education for Women, work aggregating 120 semester-units credit.[1] This work is divided into Junior College and Senior College requirements.

JUNIOR COLLEGE REQUIREMENTS

The Junior College requirements, which represent the requirements of the Freshmen and Sophomore years, are as follows: English 1 (6 units), and in addition 12 units from one of the following main divisions, which shall be known as the student's major division, and 6 units from each of the others. However, the specific entrance requirements imposed for the division in which the twelve units are elected must be met.

DIVISION I	DIVISION II	DIVISION III
Latin	History	Mathematics
Greek	Sociology	Zoology
German	Economics	Botany
French	Political Science	Hygiene
Spanish	Psychology	Geology
English Language	English Literature	Chemistry
		Physics

Furthermore, two subjects begun in the Freshman year and distributed in two of the main divisions must be continued through the Sophomore year.

[1] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

The remaining units necessary to make a total of sixty may be chosen freely from the departments included in the College of Arts and Science. To students completing this work will be given the Junior Certificate and the title of Associate.

TABLE OF JUNIOR COLLEGE REQUIREMENTS

The following table presents the Junior College requirements in graphic form:

CONTENTS OF DIVISIONS

DIVISION I	DIVISION II	DIVISION III
Latin	History	Mathematics
Greek	Sociology	Zoology
German	Economics	Botany
French	Political Science	Hygiene
Spanish	Psychology	Geology
English Language	English Literature	Chemistry
		Physics

ENTRANCE REQUIREMENTS

English a and b	English a and b	English a and b
Mathematics a and b	Mathematics a and b	Mathematics a, b, and c
Latin, 4 units	Language other than English, 2 units	Language other than English, 2 units
	History, 2 units	Science, 1 unit
Elective, 7 units	Elective, 7 units	Elective, 7 units

JUNIOR COLLEGE REQUIREMENTS

12 units from Division I	12 units from Division II	12 units from Division III
6 units each from Divisions II and III	6 units each from Divisions I and III	6 units each from Divisions I and II
Military Science (required of men)	Military Science (required of men)	Military Science (required of men)
Physical Education (required of women)	Physical Education (required of women)	Physical Education (required of women)
English 1, 6 units	English 1, 6 units	English 1, 6 units
Elective, 30 units	Elective, 30 units	Elective, 30 units

SENIOR COLLEGE REQUIREMENTS

The Senior College requirements, which represent the requirements of the Junior and Senior years, include a group and free electives in character as follows:

GROUP

The group must embrace two departments and must consist of courses aggregating not fewer than twenty-four nor

more than thirty-six units of Senior College work. This group need not necessarily lie within the division selected as the major division in fulfilling the Junior College requirements. Of these courses not fewer than twelve nor more than twenty-four units must be in one department.

The combined work of the two departments should represent a unity of aim. The particular grouping, however, will depend upon the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
Language—Literature Group	*Social Science Group*
Greek, Latin, French, German, English.	History, Law, Economics, Sociology.
3	4
Biological Science Group	*Physical Science Group*
Zoology, Botany, Chemistry, Geology.	Chemistry, Physics, Mathematics, Geology, Mineralogy.

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to elect a considerable amount of history also. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a Science major will often find it profitable to have a good reading knowledge of French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Advisory Committee, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

FREE ELECTIVES

The remaining units necessary to make a total of sixty may be freely elected from any courses offered in the College of Arts and Science, and from the following additional subjects: Agriculture, Horticulture, Veterinary Science, Metallurgy,

Assaying, Agricultural Chemistry, and Surveying, provided that the requirements of the departments in which the work is selected are satisfied.

It is advisable that students should plan their work for the Junior and Senior years as early as the beginning of the Sophomore year, in order that the studies elected then may fit in with their later work.

THESES

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED NORMAL COURSE

Students in the College of Arts and Science may be registered in the College of Education, Advanced Course, during their Junior and Senior years by electing courses in Education aggregating ten hours.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application, including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Studies the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required of the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Study.

A thesis shall constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing; but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Study may appoint. In case semester examinations are taken the grade received will be averaged with the oral examinations and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

COURSES OF INSTRUCTION

I. Greek	XIV. Psychology
II. Latin	XV. Zoology
III. French	XVI. Hygiene
IV. Spanish	XVII. Botany
V. German	XXV. Domestic Science
VI. English	XXVI. Geology
VII. Music	XXVII. Mineralogy
VIII. Art	XXVIII. Chemistry
IX. History	XXIX. Physics
X. Law	XXXI. Mathematics
XI. Economics	XXXVIII. Military Science and Tactics
XII. Sociology	XXXIX. Physical Education for Men
XIII. Education	XL. Physical Education for Women

I. GREEK LANGUAGE AND LITERATURE

PROFESSOR WATSON

Junior College Courses

1. ELEMENTARY. Grammar and exercises. An introductory course designed for students who wish by somewhat concentrated effort to acquire in one year the ability to read ordinary Attic prose. *First semester. Hours to be arranged. Five credits.* 201 Morrill Hall. Professor Watson.

2. ELEMENTARY (continued). Grammar, exercises, and Xenophon's Anabasis, Books I–IV. Open to those who have

taken Greek 1, or its equivalent. The successful completion of both courses will admit students to Greek 3. *Second semester. Hours to be arranged. Five credits.* 201 Morrill Hall. Professor Watson.

3. PLATO AND LYSIAS. Plato's Apology and Crito, and selected orations of Lysias. Open to those who have had Greek 1 and 2, and to those who have satisfied the entrance requirements in Greek. *First semester. Hours to be arranged. Three credits.* 201 Morrill Hall. Professor Watson.

4. HOMER. Introduction to the grammar and prosody of Homer, and to the Ionic dialect, with reading of the Iliad. Books I–VI. *Second semester. Hours to be arranged. Three credits.* 201 Morrill Hall. Professor Watson.

5. GREEK PROSE COMPOSITION (first course). A systematic study of Greek grammar, and the writing of sentences and simple connected narrative. Required of all Greek majors, and open to those taking Greek 3 and 4, and to those who have not already had Greek Composition and are pursuing any of the more advanced courses. *Both semesters. Hours to be arranged. Two credits.* 201 Morrill Hall. Professor Watson.

6. THUCYDIDES. ELEGIAC, IAMBIC, AND LYRIC POETS. Reading of Book I of Thucydides, followed by selections from the Elegiac, Iambic, and Lyric Poets. *First semester. Hours to be arranged. Three credits.* 201 Morrill Hall. Professor Watson.

7. EURIPIDES AND SOPHOCLES. Introduction to Greek Tragedy, with reading of the Medea of Euripides and the Œdipus Tyrannus of Sophocles, and with some attention to their structure and meters. *Second semester. Hours to be arranged. Three credits.* 201 Morrill Hall. Professor Watson.

8. GREEK PROSE COMPOSITION (second course). The writing of connected passages based upon authors already read, with special attention to the Greek verb. Open only to those who have taken Greek 4 or its equivalent. *Both semesters. Hours to be arranged. Two credits.* 201 Morrill Hall. Professor Watson.

Senior College Courses

21. GREEK LITERATURE—THUCYDIDES. The Sicilian Expedition, Books VI and VII, with some study of the historical and political aspects of the campaign. *First semester. Hours to be arranged. Three credits.* Professor Watson.

22. GREEK LITERATURE—HOMER. Rapid reading of the greater part of the Iliad, with some attention to Homeric problems. *Second semester. Hours to be arranged. Three credits.* Professor Watson.

23. GREEK LITERATURE—DEMOSTHENES. Reading of the Oration on the Crown as a masterpiece of eloquence and with special reference to Demosthenes as an orator and statesman. *First semester. Hours to be arranged. Two credits.* Professor Watson.

24. GREEK LITERATURE—THE PASTORAL. Selections from Theocritus, Bion, and Moschus, with a study of the influence of these writers in the history of Pastoral poetry. *Second semester. Hours to be arranged. Two credits.* Professor Watson.

25. GREEK LITERATURE—PLATO. Reading of the greater portion of the Republic of Plato, with a brief study of the History of Ancient Philosophy. *First semester. Hours to be arranged. Three credits.* Professor Watson.

26. GREEK LITERATURE—TRAGEDY. Reading of the Antigone of Sophocles, and the Prometheus Bound and the Agamemnon of Æschylus. Studies in the development of Tragedy, and in the dramatic construction and presentation of the plays read. *Second semester. Hours to be arranged. Three credits.* Professor Watson.

27. GREEK LITERATURE—HERODOTUS. The Persian Wars, Books VI, IX, with due attention to their historical and military aspects. *First semester. Hours to be arranged. Two credits.* Professor Watson.

28. GREEK LITERATURE—HOMER. Rapid reading of large portions of the Odyssey, with study of the literary influence of the Homeric Epics. *Second semester. Hours to be arranged. Two credits.* Professor Watson.

Courses 21, 22, 23, and 24 will be given in 1911–12 and in alternate years; courses 25, 26, 27, and 28 in 1912–13 and in alternate years.

II. LATIN LANGUAGE AND LITERATURE

PROFESSOR CHURCH, PROFESSOR WATSON

Junior College Courses

1. CICERO. The De Senectute and Cicero's Letters. *First semester, 2–3, M. W. F. Three credits.* 201 Morrill Hall. Professor Watson.

2. HORACE AND CATULLUS. Latin Lyric Poetry. *Second semester, 2–3, M. W. F. Three credits.* 201 Morrill Hall. Professor Watson.

3. LATIN PROSE COMPOSITION. Required of all students who have elected Latin as their major department or who seek recommendation as teachers of Latin. *Both semesters. Hours to be arranged. Two credits.* 201 Morrill Hall. Professor Watson.

4. PLAUTUS AND TERENCE. The Mostellaria of Plautus, the Phormio of Terence; Comparative Classical Comedy; some study will also be made of vernacular Latin and English derivatives. *First semester. Hours to be arranged. Three credits.* Professor Church.

5. VERGIL. Æneid VII–XII, with the study of the Classical Epic. *Second semester. Hours to be arranged. Three credits.* Professor Church.

6. LATIN PROSE COMPOSITION (second course). Designed particularly for teachers and for candidates for Rhodes Scholarships. *Both semesters. Hours and credits to be arranged.* 201 Morrill Hall. Professor Watson.

7. ROMAN PRIVATE LIFE, and its Evidences in Modern Italian Customs. Illustrated. *Second semester. Hours to be arranged. (Omitted 1911–1912.)* Professor Church.

Senior College Courses

21. COMPARATIVE PASTORAL POETRY. Theocritus to Mantuan. *First semester. Hours to be arranged. Three credits.* 206 Morrill Hall. *(Omitted 1911–1912).* Professor Church.

22. ROMAN BURIAL INSCRIPTIONS, PROSE AND METRICAL. The study of the essential features of Roman Religion and the rise of Christianity. *First semester. Hours to be arranged. One credit.* Professor Church.

23. LIVY XXI–XXII. The War with Hannibal. *Second semester. Hours to be arranged. Three credits.* 206 Morrill Hall. *(Omitted 1911–1912.)* Professor Church.

24. THE ROMAN NOVEL. Petronius and Apuleius. *First semester. Hours to be arranged. Two credits.* 206 Morrill Hall. Professor Church.

25. GREEK AND ROMAN ART AND ARCHÆOLOGY. Illustrated by lantern slides and reproductions. *First semester. Hours to be arranged.* 202–203 Morrill Hall. Professor Church.

26. PATRISTIC AND LATE LATIN; CHURCH HYMNS. *Second*

semester. Hours to be arranged. Two credits. 206 Morrill Hall. Professor Church.

27. THE LATIN LANGUAGE. Its broader principles and relation to the Romanic languages. *Second semester. Hours to be arranged. One credit.* 206 Morrill Hall. Professor Church.

28. TEACHERS' COURSE. Methods and ideals in teaching Latin; practice teaching. *Both semesters. Hours to be arranged. Two credits.* 202 Morrill Hall and Library. Professor Church and Professor Watson.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged. Two credits.* Library. Professor Church and Professor Watson.

Graduate Courses

41. TACITUS. Annals. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Church.

42. ANCIENT CLASSICAL MYTHOLOGY. Its religious and literary forms. *Second semester. Hours to be arranged.* 202 Morrill Hall. Professor Church.

60. SEMINAR FOR GRADUATES. The Study of the Winds in Classical Poetry from Homer to Ovid. *Both semesters. Three credits.* Library. Professor Church and Professor Watson.

III. FRENCH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Junior College Courses

1. BEGINNING FRENCH. Drill in grammar and in translating simple English into French, and French into English. *Both semesters, 8–9, M. W. F. Six credits.* 104 Stewart Hall. Professor de Laguna.

2. SECOND-YEAR FRENCH. Translation of such texts as Daudet's Selected Stories, Dumas's Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoleon, Extraits de Memoires et d'Histoires, and Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9–10, M. W. F. Six credits.* 104 Stewart Hall. Professor de Laguna.

Senior College Courses

23. THE FRENCH DRAMATISTS. Selected plays of Moliere, Racine and Corneille, Hugo's Hernani, Rostand's Chantecler

and La Princesse Lointaine. A synopsis or critique of each play read is required. Advanced prose composition. *Both semesters. Hours to be arranged. Six credits.* 104 Stewart Hall. Professor de Laguna.

24. MODERN FRENCH. Poetry and Prose, advanced prose composition. Essays in French on the works studied are required. *Prerequisites:* French 1 and 2. *Both semesters. Hours and credits to be arranged. M. W. F.* 104 Stewart Hall. (*Not given 1911–1912.*) Professor de Laguna.

25. RAPID READING. History of French Literature. *Prerequisites:* French 1 and 2. *Both semesters. Hours and credits to be arranged.* 104 Stewart Hall. Professor de Laguna.

40. SEMINAR FOR UNDERGRADUATES. Old French; grammar, phonetics, morphology, syntax. Reading: Chanson de Roland, Chretien de Troyes, Chevalier au Lion. *Both semesters. Hours to be arranged. Two credits.* 104 Stewart Hall. Professor de Laguna.

IV. SPANISH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Senior College Courses

21. BEGINNING SPANISH. The course in Spanish has been laid out for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from text-book work is devoted to Spanish conversation. *Prerequisites:* Two years of Latin and two of French, or an equivalent. *Both semesters. Hours to be arranged. Four credits.* 104 Stewart Hall. Professor de Laguna.

22. ADVANCED SPANISH. Modern Spanish novels and plays by standard authors. Selections from Le Sage's Gil Blas and Cervantes's Don Quixote. *Prerequisite:* Spanish 21. *Both semesters. Hours to be arranged. T. Th. Four credits.* 104 Stewart Hall. Professor de Laguna.

V. GERMAN LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA, MISS RIEGELHUTH

(Announcement of Courses in German will be revised during the summer of 1911.)

Junior College Courses

1. ELEMENTARY GERMAN. Drill in grammar, reading of easy texts, and exercises in composition. *Both semesters, 8–9, daily. Eight credits.* Miss Riegelhuth.

2. SECOND-YEAR GERMAN. Rapid reading of Leander's Traumereien, Bernhardt's Auf der Sonnenseite, and other simple stories and plays. Schiller's Maria Stuart, or Die Jungfrau von Orleans. Prose composition. *Prerequisite:* German 1, or two years of high-school German. *Both semesters, 9–10, M. W. F. Six credits.* Miss Riegelhuth.

Senior College Courses

24. GOETHE. Hermann and Dorothea, Iphigenie auf Tauris, Torquato Tasso, and Faust, I. Two papers in German are required: a synopsis of Torquato Tasso and a characterization of Faust. Advanced prose composition. *Prerequisites:* German 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Six credits.* 104 Stewart Hall. (*Not given 1911–1912.*) Professor de Laguna.

25. HISTORY OF GERMAN LITERATURE. German Lyrics and German Novels of the Nineteenth Century. Critical papers in German are required. Advanced prose composition. *Prerequisites:* German 1 and 2. *Both semesters. Hours to be arranged. M. W. F. Six credits.* 104 Stewart Hall. Professor de Laguna.

40. SEMINAR FOR UNDERGRADUATES. The interpretation of the Nibelungenlied or Walther von der Vogelweide. *Both semesters. Hours to be arranged. Two credits.* Professor de Laguna.

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Junior College Courses

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, M. W. F. Section 1, 9–10, Section 2, 10–11. Six credits.* 102 Stewart Hall. Mr. Paine.

2*a*. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. *Prerequisite:* English 1. *First semester. Hours to be arranged. Two credits.* 102 Stewart Hall. Mr. Paine.

2*b*. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisites:* English 1 and 2*a*. *Second semester. Hours to be arranged. Two credits.* 102 Stewart Hall. Mr. Paine.

3. ARGUMENTATION. The preparation of briefs and the presentation of arguments. *Both semesters. Hours to be arranged. Four credits.* 102 Stewart Hall. Mr. Paine.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, 9–10, M. W. F. Six credits.* Mackay Mining Building. Professor Hill.

Senior College Courses

25. LITERATURE OF THE NINETEENTH CENTURY. (1) General survey of the period. (2) Tennyson and Browning. *Prerequisites:* English 1 and 4. (This course alternates with 26.) *Not given in 1911–12.* Professor Hill.

26. SHAKESPEARE. The interpretation of six plays. *Prerequisites:* English 1 and 4. *Both semesters, 11–12, M. T. Th. Six credits.* Mackay Mining Building. Professor Hill.

27. CHAUCER. The Canterbury Tales. *Prerequisites:* English 1 and 4. *First semester, 10–11, M. W. F. Three credits.* Mackay Mining Building. Professor Hill.

28. MILTON. Minor Poems and Paradise Lost. *Prerequisites:* English 1 and 4. *Second semester, 10–11, M. W. F. Three credits.* Mackay Mining Building. Professor Hill.

29. OLD ENGLISH. Grammar and reading of simple prose and verse. *Prerequisites:* English 1 and 4. (This course alternates with 27.) *Not given 1911–12.* Professor Hill.

30. BEOWULF. *Prerequisites:* English 1, 4, and 29. (This course alternates with 28.) *Not given 1911–12.*

31. THE MODERN DRAMA. Ibsen, Mæterlinck, Pinero, Shaw. *Both semesters, 10–11, T. Th. Four credits.* Mackay Mining Building. Professor Hill.

32. THE NOVEL. A rapid survey of the history and development of the novel, followed by a more thorough study of the Nineteenth Century novels. (This course alternates with 31.) *Not given 1911–12.* Professor Hill.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged with individual students. Two credits.* Library. Professor Hill.

VII. MUSIC

CARL SAWVELL[1]

(Announcement of courses in Music will be revised during the summer of 1911.)

Junior College Courses

1. NOTATION AND SIGHT SINGING. The elements of vocal music. *Both semesters.* In the second semester, one recitation will be choral practice with the University Chorus. *Hours to be arranged. Two credits.* 206 Morrill Mall. Mr. Sawvell.

2. MUSICAL APPRECIATION. Lectures in the History of Music, biography, and musical forms, with frequent illustrative recitals. *Both semesters. Hours to be arranged. One credit.* 206 Morrill Hall. Mr. Sawvell.

3. THEORY. Written and analytical work in elementary harmony. *Prerequisite:* Some knowledge of the pianoforte, band or orchestral instrument. *Both semesters. Hours to be arranged. Two credits.* 206 Morrill Hall. Mr. Sawvell.

4. APPLIED MUSIC. Students of voice, piano, or solo instruments will be given credit for specified work under instructors approved by the head of the department. *Both semesters. Hours and credits to be arranged.* Mr. Sawvell.

5. THE UNIVERSITY CHORUS. Systematic study of choral music with special reference to University needs. Mr. Sawvell.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Junior College Courses

1. DRAWING. Antique life and still life. *Hours and credits to be arranged.* Physics Building. Assistant Professor Lewers.

2. PAINTING. From nature in oils and water colors. *Hours and credits to be arranged.* Physics Building. Assistant Professor Lewers.

3. ORNAMENT. Historic ornament and conventionalization. *Hours and credits to be arranged.* Physics Building. Assistant Professor Lewers.

[1] Resigned, June 1, 1911.

4. CLAY MODELING. *Hours and credits to be arranged.* Physics Building. Assistant Professor Lewers.

For description of other courses in Art, see College of Education.

IX. HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER, MISS GODBOLT

(Announcement of courses in History will be revised during the summer of 1911.)

Junior College Courses

1. MEDIEVAL HISTORY FROM THE FOURTH TO THE THIRTEENTH CENTURY. Beginning with the history of the Barbarian invasions the course traces the development of the primitive Germanic institutions, the rise of the medieval church and the Papacy, the expansion of the Frankish Empire, and the establishment of feudalism. *Both semesters, 10–11, T. Th. Four credits.* 203 Morrill Hall. Professor Wier, Miss Godbolt.

2. THE HISTORY OF EUROPE FROM THE FOURTEENTH TO THE EIGHTEENTH CENTURY. The formation of modern States, important features of the Renaissance, political and social development, as well as international relations, since the Peace of Westphalia. Special attention is given to the rise of Russia and Prussia, and to the change in Western Europe from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. *Both semesters, 10–11, M. W. F. Six credits.* 203 Morrill Hall. Miss Godbolt.

Senior College Courses

23. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for the study of law. *Prerequisite:* The character of the work will render desirable previous training in History on the part of the student. *Both semesters. Hours to be arranged. Four credits.* 203 Morrill Hall. Professor Wier.

24. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND SINCE 1485. The political history is traced merely as a background for the study of the growth of the English Parliament and the Cabinet system. Comparisons are made between the existing forms of government and administration in the various countries of Europe and America. Important as a preparation for the study of law. *Both semesters. Hours to be arranged. Four credits.* 203 Morrill Hall. *Not given 1911–12.* Professor Wier.

25. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Both semesters. Hours to be arranged. Six credits.* 203 Morrill Hall. *Given on request.* Professor Wier.

29. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoints rather than as a French local crisis. *Both semesters. Hours to be arranged. Four credits.* 203 Morrill Hall. *Not given 1911–12.* Professor Wier, Miss Godbolt.

30. THE HISTORY OF THE PACIFIC SLOPE THROUGH THE EARLY AMERICAN PERIOD. *Both semesters. Hours to be arranged. Four credits.* 203 Morrill Hall. Professor Wier.

31. NINETEENTH AND TWENTIETH CENTURY HISTORY. A comparative study of the main events in recent history. *Hours and credits to be arranged.* Professor Wier.

40. HISTORY SEMINAR. *Both semesters. Hours to be arranged. Two credits.* 203 Morrill Hall. Professor Wier.

X. LAW

PROFESSOR LEWERS

Senior College Courses

21. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester. Hours to be arranged. M. W. F. Three credits* 301 Morrill Hall. Professor Lewers.

22. INTERNATIONAL LAW. The principles of International Law as set forth by the leading text writers of America, England, and the Continent. *Second semester. Hours to be arranged. M. W. F. Three credits.* 301 Morrill Hall. Professor Lewers.

23. ADVANCED LAW. The object of this course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisites:* Law 21 and 22. *Both semesters. Hours to be arranged. M. W. F. Six credits.* 301 Morrill Hall. Professor Lewers.

XI. ECONOMICS

ACTING PROFESSOR ADAMS

Junior College Courses

NOTE—Courses 1 and 2 in Economics are open as Junior College courses to students who are planning to make a major of Economics and Sociology, Law, or History, and Political Science. Other Junior College students may take these courses only by special permission.

1. INDUSTRIAL HISTORY. An introductory study of commerce and industry in England and America. *First semester. Hours to be arranged. Three credits.* 305 Morrill Hall. Acting Professor Adams.

2. THE PRINCIPLES OF POLITICAL ECONOMY. An introduction to the leading principles of economic science. *Second semester. Hours to be arranged. Three credits.* 305 Morrill Hall. Acting Professor Adams.

Senior College Courses

21. MONEY AND BANKING. The history and theory of money, credit, and banking. *First semester. Hours to be arranged. Two credits.* 305 Morrill Hall. Acting Professor Adams.

22. PUBLIC FINANCE. Public expenditures, financial administration, taxation, and public debts. *Second semester. Hours to be arranged. Two credits.* 305 Morrill Hall. Acting Professor Adams.

23. THE STATE IN RELATION TO INDUSTRY. A study of the *laissez faire* doctrine versus the doctrine of legal regulation of industry. The subject is viewed historically and in relation to present problems. *First semester. Hours to be arranged. Two credits.* 305 Morrill Hall. Acting Professor Adams.

24. ECONOMIC GEOGRAPHY. A general survey of the history and present status of industry and commerce in the principal countries of the world. *Second semester. Hours to be arranged. Two credits.* 305 Morrill Hall. Acting Professor Adams.

25. HISTORY OF ECONOMIC THOUGHT. A critical review of the leading systems of economic thought since the sixteenth century. *First semester. Hours to be arranged. Two credits.* 305 Morrill Hall. Acting Professor Adams.

40. RESEARCH COURSE. A study of a selected subject,

ordinarily an investigation of some question of local importance. *Second semester. Hours to be arranged. Two credits.* Acting Professor Adams.

XII. SOCIOLOGY

PROFESSOR ADAMS

Junior College Courses

NOTE—Courses 1 and 2 in Sociology are open as Junior College courses to students who are planning to make a major of Economics and Sociology, Law, or History, and Political Science.

1. INTRODUCTION TO THE STUDY OF SOCIETY. An elementary course designed to afford a working theory as to the nature of society and to serve as an introduction to the special social sciences of Economics, Law, and Political Science. *First semester. Hours to be arranged. Three credits.* 305 Morrill Hall. Professor Adams.

2. DELINQUENTS, DEPENDENTS AND DEFECTIVES. A study of the causes and social treatment of crime and pauperism and of the defective classes. *Second semester. Hours to be arranged.* 305 Morrill Hall. Professor Adams.

Senior College Courses

21. SOCIAL ORGANIZATION. A study of types of social organization in relation to human nature, modes of communication, and certain phases of social evolution. *First semester. Hours to be arranged. Two credits.* 305 Morrill Hall. Professor Adams.

40. RESEARCH COURSE. A study of some selected topic, ordinarily an investigation of some local question. *Second semester. Hours to be arranged. Two credits.* 305 Morrill Hall. Professor Adams.

XIII. EDUCATION

PROFESSOR ADAMS, PROFESSOR ORDAHL

Junior College Courses

1. THE SCIENCE OF EDUCATION. This is an introductory course to the general field of education. The purpose is to develop a mental attitude of sane inquiry and to gain a fair perspective of education as a whole. Some of the more elementary problems of life are considered at first hand, in relation to present school and social systems. Problems will be discovered and formulated for treatment in the following

courses. *First and second semesters. Hours to be arranged. Six credits.* 101 Stewart Hall. Professor Ordahl.

2. LECTURES AND READINGS. Designed to assist the student in organizing his work in the training school and in correlating his practical work with his study of educational principles. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

3. TRAINING COURSE. Practical work in teaching carried on in the Orvis Ring School under the direction and supervision of the Department of Education. All students who take this course must arrange their other work in such a way as to permit of regular work five days in the week. Every lesson must be carefully planned in advance of its assignment to the pupils, and all plans must be submitted to a supervisor of the training school for criticism and suggestions. Only those students who show a disposition to do their best, and who are able to achieve reasonable success in teaching will be permitted to continue in this course. *Both semesters. Hours to be arranged. Ten credits.* Orvis Ring School. Professor Ordahl and Supervisors.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. This course deals with the development of the thought process, the formation of ideals, and the social nature of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

23. HISTORY OF EDUCATION. A brief survey of the principal educational systems of the world. *First semester. Hours to be arranged. Three credits.* Professor Adams.

24. SOCIAL ASPECTS OF EDUCATION. A study of education as utilizing the resources of civilization for the development of the individual and for his adjustment to the demands of the social order. *Second semester. Hours to be arranged. Three credits.* Professor Adams.

XIV. PSYCHOLOGY

PROFESSOR ORDAHL

Junior College Courses

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the

higher mental processes, and the emotional life. *Prerequisite:* Hygiene 1, or its equivalent. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

2. COMPARATIVE PSYCHOLOGY. The parallels between animal and human behavior, the learning process, the fundamental animal and human instincts in relation to individual and racial development. *Second semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings, and laboratory work. *Second semester. Hours to be arranged. Three credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. CHILD AND ADOLESCENT PSYCHOLOGY. Development of the nervous system and growth of the body are traced in connection with mental development. Types of child and adolescent mind are considered in relation to problems of social adjustment. Intellectual and emotional difficulties peculiar to child and youth are treated in their relation to clear thinking and moral efficiency. *Second semester, 8–9, T. Th. Two credits.* 101 Stewart Hall. Professor Ordahl.

22. ABNORMAL PSYCHOLOGY. The pathological aspects of consciousness; arrested mental development in children. The various forms of insanity and their causes. Hallucinations and illusions. *First semester. Hours to be arranged. Two credits.* 101 Stewart Hall. Professor Ordahl.

23. PSYCHOLOGY OF SUGGESTION. Normal and abnormal suggestion; symptoms and conditions of hypnosis; phenomena of dual personality; educational uses of suggestion. Examination of mind and faith cure. *Hours to be arranged. Two credits.* 101 Stewart Hall. Professor Ordahl.

24. ESTHETICS. Development of the ideas of beauty. The psychological foundations of esthetic appreciation. *Second semester. Hours to be arranged. Three credits.* 101 Stewart Hall. Professor Ordahl.

Courses 22, 23 and 24 given on application of four or more students.

25. ETHICS. In this course ethics is considered a branch of psychology. Present standards of moral and ethical conduct are treated in the light of historical development, and interpreted from a psychological standpoint. *First semester.*

Hours to be arranged. Two credits. 101 Stewart Hall. Professor Ordahl.

XV. ZOOLOGY

PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th.* 101 Stewart Hall. *Laboratory, 2–4:40, M. W. Four credits.* 202 Hatch Hall. Professor Frandsen and Mr. Brown.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anatomy in the high school and as a preparation for research work in anatomy. *Prerequisites:* Zoology 1 and Hygiene 1. *Both semesters, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Ten credits.* 202 Hatch Hall. Professor Frandsen.

Senior College Courses

23. HISTOLOGY. The methods of killing, fixing, sectioning, staining, and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisites:* Zoology 1 and 2, Hygiene 1. *First semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits.* 202 Hatch Hall. Professor Frandsen.

24. EMBRYOLOGY. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick and pig at successive stages of development. *Prerequisites:* Zoology 1, 2, 23, and Hygiene 1. *Second semester, 10–11, M. W. F. Laboratory 1–4:30, T. Th. Five credits.* 202 Hatch Hall. Professor Frandsen. Courses 23 and 24 alternate with course 2.

28. EVOLUTION. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon

science and life in general. *Second semester. Hours to be arranged. Two credits.* Professor Frandsen.

40. RESEARCH COURSE. Students electing Zoology as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects selected from the different lines of zoological research, anatomy, physiology, histology, and embryology will be submitted to the choice of the student. If desired a student may elect thesis work in excess of the minimum one credit required. *Both semesters. Hours and credits to be arranged with individual student.* 202 Hatch Hall. Professor Frandsen.

For description of other courses in Zoology, see College of Agriculture.

XVI. HYGIENE

PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures 8–9, T. Th. Laboratory, 2–4:30, T. F. Eight credits.* 101 Stewart Hall. Professor Frandsen and Mr. Brown.

2. GENERAL BACTERIOLOGY. Morphology and classification of bacteria. Methods of making cultures and studying the life processes of bacteria. Fermentation, putrefaction, etc., and their importance in the economy of nature. Pathogenic bacteria. *Second semester. Hours to be arranged. Four credits.* 202 Hatch Hall. Professor Frandsen.

XVII. BOTANY

PROFESSOR KENNEDY, PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W.* 101 Stewart Hall. *Laboratory, 2–4:30, M. W. Four credits.* 301 Hatch Hall. Professor Frandsen and Mr. Brown.

2. CRYPTOGAMIC BOTANY. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:20, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen.

3. COMPARATIVE HISTOLOGY OF PLANTS. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. *Prerequisites:* Botany 1 and 2. *First semester. Lectures, 9–10, M. W. Laboratory, 2–4:30, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen.

Senior College Courses

24. TAXONOMY AND PHYLOGENY OF THE ANGIOSPERMS. A study of the genetic relationship of the phanerogamous orders with practical studies in the laboratory relative to the flora of Nevada. *Prerequisite:* Botany 1, or its equivalent. *Both semesters. Hours to be arranged. Six credits.* 303 Stewart Hall. Professor Kennedy.

25. PHYSIOLOGICAL BOTANY. A course of experiments similar to that outlined in McDougal's Plant Physiology. *Prerequisites:* Botany 1, 2, and 3. *Second semester. Hours and credits to be arranged.* Professor Frandsen.

40. RESEARCH COURSE. This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Prerequisites:* Botany 1, 2, 3, or 24. *Both semesters. Hours to be arranged. Four credits.* 303 Stewart Hall. Professor Kennedy.

For description of other courses in Botany, see College of Agriculture.

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

Junior College Courses

1a. TEXTILES. Hygienic and historic dress. Studies in color and design in relation to dress. Lectures on choice of design, color and material in home decoration. Practice work in cutting, fitting and designing. *Both semesters, 1 Lec. 1 Lab.*

Hours to be arranged. 1 Stewart Hall. Assistant Professor Bardenwerper.

2a. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

3a. HISTORY OF COOKERY. Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

4a. SANITATION. Food tests. *Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

One credit only is given each semester for work in the Department of Domestic Science and no more than four credits will be accepted toward a degree.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Junior and Senior College Courses

21. GENERAL GEOLOGY. The first semester's work deals chiefly with the dynamic and structural aspects of the subject, being a general discussion of geologic forces and their results. During the second semester an outline is given of the history of the earth, including diastrophic changes, stratigraphic relationships, and the description of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *First semester, 10–11, M. W. F. Three credits. Second semester, 10–11, M. F. Two credits.* Mackay Mining Building. Professor Smith.

26. PHYSICAL GEOGRAPHY. Advanced course. *Prerequisites:* Elementary Physics and Chemistry. *Both semesters. Hours to be arranged. Four credits.* Mackay Mining Building. Professor Smith.

Senior College Courses

22. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisites:* Geology 21, Mineralogy 1a, 1b, and 3. *Second semester, 1–2, M .T. Two credits.* Mackay Mining Building. Professor Smith.

23a. PETROGRAPHIC LABORATORY. The study of rocks in

the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 1–4, W. One credit.* Mackay Mining Building. Professor Smith.

23b. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen, and in thin section with microscope. *Prerequisites:* Mineralogy 4 and 5, and Geology 21a. Geology 22 should be taken concurrently. *Second semester, 1–4, W. One credit.* Mackay Mining Building. Professor Smith.

24a. FIELD GEOGRAPHY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 21. *Second semester. One credit.* Professor Smith.

24b. FIELD GEOGRAPHY. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably a mining camp where both the surface and the underground geology may be investigated. The field for 1910 was the vicinity of Goldfield, Nevada. A concise report of the work, together with well-kept field notes, a finished geological map and cross-sections, is required of each member of the class. *Prerequisites:* Geology 21, 22 and 24a. *Three credits.* Professor Smith and Assistant Professor Jones.

24c. FIELD GEOGRAPHY. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspects of the work will be given. *Prerequisite:* Geology 24b. *First semester. Hours to be arranged. One credit.* Mackay Mining Building. Professor Smith.

25a. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and the distribution of the principal ores, nonmetallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Geology 21, 22, and either 23a or 23b. *First semester. Hours to be arranged. Three credits.* Mackay Mining Building. Professor Smith.

25b. ECONOMIC GEOLOGY. An advanced course treating the modes of occurrence, origin, and distribution of metalliferous deposits, with a study of the important mining camps of North America. *Prerequisite:* Geology 25a. *Sec-*

ond semester. Hours to be arranged. Three credits. Mackay Mining Building. Professor Smith.

40. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Smith.

60. GRADUATE COURSE. The original investigation of geologic problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Junior College Courses

1a. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

1b. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–1:30, W. Two credits.* Mackay Mining Building. Professor Smith.

24. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Mineralogy 1a and b, or 2; Physics 2 and 3. *First semester, 1–2, M. T. Two credits.* Mackay Mining Building. Professor Smith.

25. OPTICAL PROPERTIES OF MINERALS. Microscopic study

the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 1–4. W. One credit.* Mackay Mining Building. Professor Smith.

23b. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen, and in thin section with microscope. *Prerequisites:* Mineralogy 4 and 5, and Geology 21a. Geology 22 should be taken concurrently. *Second semester, 1–4. W. One credit.* Mackay Mining Building. Professor Smith.

24a. FIELD GEOGRAPHY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 21. *Second semester. One credit.* Professor Smith.

24b. FIELD GEOGRAPHY. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably a mining camp where both the surface and the underground geology may be investigated. The field for 1910 was the vicinity of Goldfield, Nevada. A concise report of the work, together with well-kept field notes, a finished geological map and cross-sections, is required of each member of the class. *Prerequisites:* Geology 21, 22 and 24a. *Three credits.* Professor Smith and Assistant Professor Jones.

24c. FIELD GEOGRAPHY. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspects of the work will be given. *Prerequisite:* Geology 24b. *First semester. Hours to be arranged. One credit.* Mackay Mining Building. Professor Smith.

25a. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and the distribution of the principal ores, nonmetallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Geology 21, 22, and either 23a or 23b. *First semester. Hours to be arranged. Three credits.* Mackay Mining Building. Professor Smith.

25b. ECONOMIC GEOLOGY. An advanced course treating the modes of occurrence, origin, and distribution of metalliferous deposits, with a study of the important mining camps of North America. *Prerequisite:* Geology 25a. *Sec-*

ond semester. Hours to be arranged. Three credits. Mackay Mining Building. Professor Smith.

40. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Smith.

60. GRADUATE COURSE. The original investigation of geologic problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Junior College Courses

1a. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

1b. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–4:30, W. Two credits.* Mackay Mining Building. Professor Smith.

24. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Mineralogy 1a and b, or 2; Physics 2 and 3. *First semester, 1–2, M. T. Two credits.* Mackay Mining Building. Professor Smith.

25. OPTICAL PROPERTIES OF MINERALS. Microscopic study

and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. Mineralogy 24 should be taken concurrently. *First semester, 1–4, F. One credit.* Mackay Mining Building. Professor Smith.

60. GRADUATE COURSE. To students suitably prepared opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith and Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, PROFESSOR JACOBSON, ASSISTANT PROFESSOR DINSMORE, MR. KENNEDY, MR. ANDERSON

Junior College Courses

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Designed for students who have not presented matriculation chemistry. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Mr. Anderson.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. Four credits.* 101 Chemistry Building. Professor Adams and Mr. Anderson.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Anderson.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisites:* Chemistry 3 and 4. *First semester, 2–4:30. Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams.

6. QUANTITATIVE ANALYSIS. Special determinations in Analytical Chemistry will be assigned to meet the demands of the individual students and the department in which the

degree is sought. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams.

Senior College Courses

22. INDUSTRIAL CHEMISTRY. A lecture course on the application of chemical principles to the industrial arts. The course includes the manufacture of acids, alkalies, cements, glass, pottery, explosives, dyes, sugars, soaps, paints, varnishes, and numerous other commercial products. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Professor Dinsmore.

23. TECHNICAL ANALYSIS. A laboratory course to accompany Chemistry 22. The analysis of certain commercial products that will suit the requirements of the individual student. *First semester. Hours to be arranged. Two credits.* Chemistry Building. Professor Dinsmore.

27. ORGANIC CHEMISTRY. Lectures on the carbon compounds. *Prerequisites:* Chemistry 3 and 4. (Given in alternate years with Chemistry 46 and 47.) *Both semesters, 10–11, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

28. ORGANIC CHEMISTRY. A laboratory course given in connection with Chemistry 27. *Both semesters, 2–4:30, M. T. Four credits.* 102 Chemistry Building. Professor Adams.

40. THESIS WORK FOR UNDERGRADUATES. Laboratory and library work on special topics to be chosen by the student in consultation with the instructors. *Prerequisites:* Chemistry 6, 27, and 28. *Second semester. Hours and credits to be arranged.* Chemistry Building. Professors Adams, Jacobson, and Dinsmore.

Graduate Courses

44. PHYSICAL CHEMISTRY. A lecture course correlating facts and theories concerning chemical reactions, solutions, vapor-tension, osmotic pressure, viscosity, polarimetry, electrical-conductivity, thermo-chemistry, chemical dynamics, and equilibrium, and related phenomena. *Prerequisites:* Chemistry 27 and 28, and Physics 3. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Professor Jacobson.

45. PHYSICAL CHEMISTRY. A laboratory course to accom-

pany Chemistry 44. *Second semester. Hours to be arranged. Two credits.* 207 Chemistry Building. Professor Jacobson.

46. HISTORY OF CHEMISTRY. A lecture course on the history and development of the science of Chemistry. (Given in alternate years with Chemistry 27.) *First semester, 9–10, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

47. ADVANCED ORGANIC CHEMISTRY. A lecture course on special chapters in organic chemistry. (Given in alternate years with Chemistry 27.) *Prerequisites:* Chemistry 27, 28, and German 2. *Second semester, 10–11, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

48. RADIOACTIVITY. A lecture course on the radioactivity of ores and elements. Methods of testing and properties of the Alpha, Beta, Gamma, and X rays. Radium emanations and its bearings upon the degradation of the elements. *Prerequisites:* Chemistry 44 and Physics 22. *First semester, 10–11, F. One credit.* 205 Chemistry Building. (*Not given 1911–12.*) Professor Jacobson.

60. THESIS COURSE FOR GRADUATE STUDENTS. Special problems for research, chosen in consultation with some member of the department, and carried on under his direction. No student will be admitted to this course who has not completed three years' work in Chemistry. *Hours and credits to be arranged.* Chemistry Building. Professors Adams, Jacobson, and Dinsmore.

XXIX. PHYSICS

PROFESSOR HARTMAN, MR. ————

Junior College Courses

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition, but with a deficiency in this subject. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely quantitative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurement. *Prerequisite:* Plane Geometry. A knowledge of Trigonometry also is desirable. *Both semesters, Lectures 10–11, daily; Laboratory, 2–1:30, F. Twelve credits.* 5, 6, and 11 Physics Building. Professor Hartman.

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recita-

tions are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisites:* Mathematics 1 and 7; Physics a or Physics 1. *Both semesters, 9–10, daily. Ten credits.* 11 Physics Building. Professor Hartman.

3. PHYSICAL MEASUREMENTS. Experimental work of distinctly quantitative character is done in heat and mechanics, sound and light, and electricity and magnetism. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisites:* Mathematics 1 and 7; Physics 1. *Both semesters, 2–4:30, W. Th. Two credits.* 5 and 6 Physics Building. Professor Hartman.

Senior College Courses

21. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisites:* Physics 1, 2, and 3. *Second semester, 2–4:30, T. W. One or two credits.* 5 and 6 Physics Building. Professor Hartman.

22. HEAT AND THERMODYNAMICS. Lectures and recitations accompanied by experimental work of a quantitative character. This course, together with Physics 23, is introductory to Mathematical Physics. Many of the more difficult subjects that were merely touched upon in Physics 1 will be fully treated. *Prerequisites:* Physics 1, 2, 3, and Mathematics 7, 8, 9. *Both semesters, 8–9, T. Th. Four credits.* 11 Physics Building. Professor Hartman.

23. LIGHT AND PHYSICAL OPTICS. Lectures with experimental illustration on selected topics in light, including discussion of wave theory, diffraction, interference, resolving power of optical instruments, dispersion and absorption, spectrum analysis, double refraction and polarization. *Prerequisites:* Physics 2, 3; Mathematics 7, 8, and 9. *Both semesters, 8–9, T. Th. Four credits.* 11 Physics Building. Professor Hartman.

24. PHYSICAL OPTICS. Laboratory exercises in connection with Course 23. *First semester, 2–4:30, M. W. Two credits.* 11 Physics Building. Professor Hartman.

25. HISTORY OF PHYSICS. Lectures and recitations. Prep-

aration of reports and discussion of assigned topics by members of the class. *Prerequisites:* Physics 1, 2, 3. *Both semesters, 10–11, Th. One credit.* 11 Physics Building. Professor Hartman.

26. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisite:* Physics 2. *First semester, 8–9, T. Th. Two credits.* 11 Physics Building. Professor Hartman.

40. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* 11 Physics Building. Professor Hartman.

XXXI. MATHEMATICS

PROFESSOR HASEMAN

Junior College Courses

1. ALGEBRA. A review of elementary algebra, quadratic equations, exponents and radicals, binomial theorem, mathematical induction, logarithms, progressions, determinants, theory of equations. *First semester. Hours to be arranged. Three credits.* 107 Morrill Hall. Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, the sphere. *Second semester, six weeks. Hours to be arranged. One credit.* 107 Morrill Hall. Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, twelve weeks. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy with a study of the solar system, the stars, comets, etc. *First semester. Hours to be arranged. Three credits.* 107 Morrill Hall. Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to certain problems of practical astronomy. The theory and the use of the transit instrument. The determination of time, latitude and longitude. *Second semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review

of algebra and trigonometry; advanced algebra to suit the needs of the students; geometry of the point, straight line, transformation of coordinates, conic sections, and the general equation of the second degree. Some time will be spent on the analytic geometry of three dimensions. *Both semesters. Hours to be arranged. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminant forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester. Hours to be arranged. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester. Hours to be arranged. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

25. HISTORY OF MATHEMATICS. Lectures and assigned reading on the history of the mathematical science. *First semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

For students who desire to pursue Mathematics as a major subject the following more advanced courses can be arranged: Theory of Equations; Advanced Calculus; Differential Equations; Theory of Numbers; Theory of the Functions of a Complex, Variable, etc.

XXXVIII. MILITARY SCIENCE AND TACTICS

LIEUTENANT MCCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 12–1, M. T. W. Th. One credit.* Lieutenant McClure.

Junior College Courses

2. REGULATIONS. Recitations in Infantry, Drill Regulations, Firing Regulations for Small-Arms, Field Service

[1] For exceptions, see Organization of Battalion of Cadets, page 51.

Regulations, and Manual for Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Four semesters, 12–1, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Four semesters, 12–1, F. One-half credit.* Lieutenant McClure.

XXXIX. PHYSICAL EDUCATION FOR MEN

LIEUTENANT MCCLURE

Junior College Courses

1. GYMNASIUM PRACTICE. *Hours to be arranged.* Gymnasium. Lieutenant McClure.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS MEIGHAN

NOTE—This course is offered to all young women of the University, and is required in the Freshmen and Sophomore years as part of the regular work. Two (or three) hours each week are required of all students taking the course. Upon entering the class students are carefully examined by a physician with particular attention to the lungs and heart action, and information concerning the general health and any inherited tendencies is solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, and regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

A deposit of fifty cents at the beginning of the year is required of all students, the same to be returned at the close of the year to students returning keys to lockers.

Junior College Courses

1. CALISTHENICS. Free work, wands, Indian clubs, barbells, dumb-bells, bounding balls, march tactics, elementary

[1] For exceptions, see Organization of Battalion of Cadets, page 51.

folk and national dances, games, as basket-ball, captain ball, indoor baseball, handball and tennis. *Hours to be arranged.* Gymnasium. Miss Meighan.

2. ADVANCED SWEDISH AND GERMAN GYMNASTICS, advanced folk and national dances, advanced work in clubs, bar bells, and dumb-bells; light apparatus work; the horse; parallel bars, mat and buck; games, tennis, basket-ball and indoor baseball. *Hours to be arranged.* Gymnasium. Miss Meighan.

One credit is given for work in the Department of Physical Education.

COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE

2. SCHOOL OF DOMESTIC SCIENCE[1]

[1] The School of Domestic Science is as yet only partially organized, a complete organization awaiting the accumulation of a sufficient reserve.

COLLEGE OF AGRICULTURE

FACULTY

JOSEPH EDWARD STUBBS.....President
PETER FRANDSEN.....Professor of Biology
P. BEVERIDGE KENNEDY.....Professor of Botany, Horticulture and Forestry
SAMUEL BRADFORD DOTEN.....Professor of Entomology
GORDON HAINES TRUE.....Professor of Agriculture and Animal Husbandry
W. S. TANGIER SMITH.....Professor of Geology and Mineralogy
MAXWELL ADAMS.....Professor of Chemistry
WINFRED BERDELL MACK.....Professor of Bacteriology and Veterinary Science
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
LOWE ABEEL MCCLURE.....Professor of Military Science and Tactics, and Instructor in Physical Education for Men
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
STERLING PRICE FERGUSSON.....Professor of Meteorology and Climatology
KATE BARDENWERPER.....Assistant Professor of Domestic Science
CHARLES S. KNIGHT.....Assistant Professor of Agronomy
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
AMOS ARTHUR HELLER.....Assistant Professor of Botany, Horticulture and Forestry
SANFORD CROSBY DINSMORE.....Assistant Professor of Agricultural Chemistry
GEORGE DELAFIELD POWERS.....Instructor in Mechanical Engineering
GUSTAVUS SWIFT PAINE.....Instructor in English
ALBERT W. PRESTON.....Instructor in Mechanical Engineering
HELEN ANN MEIGHAN.....Instructor in Physical Education for Women
FRANK LEROY PETERSON.....Instructor in Irrigation
CHARLES LEROY BROWN.....Assistant in Biology
WALTER W. ANDERSON.....Assistant in Chemistry
MILES BRYCE KENNEDY.....Assistant in Chemistry
AUGUST HOLMES.....Student Assistant in Mathematics

AIM

The aim of the College of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operation of farming, gardening and stock raising, but also to give such training in English, mathematics, and the sciences as will furnish a well-rounded education.

EQUIPMENT

The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, and where representatives of different breeds of pure-bred farm animals are available for class work, affords a first-hand acquaintance with the problems and methods of practical agriculture and horticulture. The adjacent Sierra Nevada mountains furnish a valuable field for the study of forestry and the conservation of timber and snow.

CONDITIONS OF ADMISSION

SCHOOL OF AGRICULTURE

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from the accredited school or not. The examination will be held in August of each year.

4. All new students of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
4.	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to the College of Agriculture, the candidates must present English a and b; Mathematics a and b; language other than English, 2 units[1], American History and Civics, 1 unit; Science, 2 units; 8 other units[2], to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may

[1] This requirement will go into effect August 1, 1914.
[2] August 1, 1914, these units will be reduced to 6.

sor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of the College of Agriculture and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

The Degree of Bachelor of Science in Agriculture is conferred upon students who, in addition to meeting the requirements in Military Science, have satisfactorily completed the full course of study, aggregating 144 semester-units[1], in the School of Agriculture as follows:

SCHOOL OF AGRICULTURE

COURSE OF STUDY

FRESHMAN

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
English 1	..	3	English 1	..	3
Mathematics	..	3	Mathematics 2, 3	..	3
Zoology 1	2	3	Botany 1	2	2
Agronomy 1	..	3	Animal Husbandry 1	1	3
Mechanic Arts 1	1	..	Mechanic Arts 2	1	..
Elective	..	3	Elective	..	3
Total		18	Total		18

[1] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

SOPHOMORE

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
English 4	..	3	English 4	..	3
Chemistry 1, 2 or 3, 4	2	2	Chemistry 1, 2 or 3, 4	2	2
Animal Husbandry 4	2	3	Horticulture 1	2	3
Agronomy 5	..	3	Agronomy 2	..	3
Elective	..	3	Elective	..	3
Total		18	Total		18

JUNIOR

First Semester			*Second Semester*		
Agronomy 23 or Horticulture 22, 24	1	3	Animal Husbandry 23, 25 or Horticulture 23, 25	1	3
Economic Botany 26	1	2	Economic Entomology	1	2
Chemistry 29, 30	2	2	Chemistry 29, 30	2	2
C. E. 1 (Surveying)	2	2	C. E. 35 (Rural Engineering)	2	2
Elective	..	3	Elective	..	3
Total		18	Total		18

SENIOR

First Semester			*Second Semester*		
Agronomy 27	2	3	Veterinary Science 21	3	2
Thesis	..	2	Thesis	..	2
Electives	..	11	Electives	..	11
Total		18	Total		18

SCHOOL OF DOMESTIC SCIENCE

The courses in Domestic Science have thus far necessarily been restricted to practical laboratory work. In the past year, however, there have been added to the Library many books along the lines of sanitation, dietetics, hygiene, and food chemistry, thus enabling the student to do independent library work. The library will be still further increased and related courses in Chemistry and Hygiene will be added.

From the beginning the young women of our State have shown strong interest in the various phases of this work. The department aims to raise the ideals of home-making and home-keeping, and to improve the general well-being of the student.

COURSES OF INSTRUCTION

VI. English
XV. Zoology
XVI. Hygiene
XVII. Botany
XVIII. Horticulture
XIX. Forestry
XX. Agronomy
XXI. Animal Husbandry
XXII. Veterinary Science
XXIII. Dairying
XXIV. Entomology
XXV. Domestic Science
XXVI. Geology
XXVII. Mineralogy
XXVIII. Chemistry
XXX. Meteorology and Climatology
XXXI. Mathematics
XXXV. Mechanic Arts
XXXVI. Civil Engineering
XXXVIII. Military Science and Tactics
XXXIX. Physical Education for Men
XL. Physical Education for Women

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Junior College Courses

1. COMPOSITION AND RHETORIC. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 9–10, Section 2, 10–11, daily. Six credits.* 102 Stewart Hall. Mr. Paine.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, M. W. F. Six credits.* Mackay Mining Building. Professor Hill.

XV. ZOOLOGY

PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. GENERAL ZOOLOGY. An introduction to the whole field of Zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th.* 101 Stewart Hall. *Laboratory, 2–4:30, M. W. Four credits.* 202 Hatch Hall. Professor Frandsen, Mr. Brown.

XVI. HYGIENE

PROFESSOR FRANDSEN

Junior College Courses

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th.* 301 Hatch Hall. *Laboratory, 2–4:30, F. Six credits.* 101 Stewart Hall. Professor Frandsen and Mr. Brown.

For description of other courses, see Hygiene, College of Arts and Science.

XVII. BOTANY

PROFESSOR KENNEDY, PROFESSOR FRANDSEN, ASSISTANT PROFESSOR HELLER, MR. BROWN

Junior College Courses

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester. Lectures, 8–9, T. Th.* 301 Hatch Hall. *Laboratory, 2–4:30, M. W. Four credits.* Professor Frandsen.

2. CRYPTOGAMIC BOTANY. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. Lectures illustrated by lantern slides and Laboratory. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:30, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen.

Senior College Courses

26. ECONOMIC BOTANY. The nature and treatment of pathological and physiological diseases of plants, weeds, poisonous plants, grasses, and forage plants. *Prerequisites:* Botany 1 and 2. *First semester. Hours to be arranged. Three credits.* 303 Stewart Hall. Professor Kennedy and Assistant Professor Heller.

For description of other courses, see Botany, College of Arts and Science.

XVIII. HORTICULTURE

PROFESSOR KENNEDY, ASSISTANT PROFESSOR HELLER

Junior College Courses

1. GENERAL HORTICULTURE. Fruit growing, vegetable gardening, the propagation of plants, pruning, grafting, budding, pollination, the making of lawns, ornamental shrubs and the beautifying of home and farm grounds. *Second semester. Hours to be arranged. Lectures and Laboratory. Five credits.* 303 Stewart Hall. Professor Kennedy and Assistant Professor Heller.

Senior College Courses

22. FLORICULTURE. The growing of flowers for home decoration and for market. Greenhouse management and construction. *First semester. Two credits. Hours to be arranged.* 303 Stewart Hall and the Greenhouses. Professor Kennedy.

23. VEGETABLE GARDENING. The general principles underlying the growing of vegetables for the home and market, both under glass and in the open. *Green:* Vegetable Gardening. *Second semester. Hours to be arranged. Two credits.* 303 Stewart Hall. Professor Kennedy.

24. THE EVOLUTION OF CULTIVATED PLANTS. The discussion of organic evolution as applied to the modification of plants, particularly those in cultivation. *Prerequisites:* Botany 1 and Horticulture 1. *First semester. Hours to be arranged. Two credits.* 303 Stewart Hall. Assistant Professor Heller.

25. LANDSCAPE GARDENING. The general principles governing outdoor art, with sundry suggestions for their application in the commoner problems of gardening. *Waugh:* Landscape Gardening. *Second semester. Hours to be arranged. Two credits.* 303 Stewart Hall. Professor Kennedy.

26. PLANT BREEDING. The fundamental principles governing the amelioration of plants and the methods of producing new varieties of fruits and ornamental plants. *De Vries:* Plant Breeding. *Bailey:* Plant Breeding. *Prerequisites:* Horticulture 1 and Botany 1. *First semester. Hours to be arranged. Five credits.* 303 Stewart Hall. Professor Kennedy.

XIX. FORESTRY

ASSISTANT PROFESSOR HELLER

Junior College Courses

1. DENDROLOGY. The North American trees and their uses. *Both semesters. Hours to be arranged. Six credits.* 303 Stewart Hall. Assistant Professor Heller.

2. ELEMENTARY FORESTRY. The effects of deforestation on the water supply, forest protection and regeneration, care of forests, etc. *Prerequisite:* Botany 1 or Forestry 1. *Second semester. Hours to be arranged. Three credits.* 303 Stewart Hall. Assistant Professor Heller.

XX. AGRONOMY

PROFESSOR TRUE, ASSISTANT PROFESSOR KNIGHT, MR. PETERSON

Junior College Courses

1. ELEMENTARY AGRICULTURE. Introduction to Animal Husbandry, Horticulture, Agronomy and Dairying. The soil—its formation, texture, plant-food requirements, mois-

ture, tillage and fertility; the plant—its relation to soil and climate, its propagation, growth and cultivation, and the kind of crops and their culture; the animal—its life, feeding and breeding. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

2. FARM ENGINEERING. The laws and principles which control the practice of agriculture, including the following subjects: The invention, history and development of farm machinery; principles of construction and operation, with a comparison of the different types or makes of machines of different classes according to their adaptation for special conditions and uses; friction and lubricants; construction and ventilation of farm buildings; strength of materials; construction and maintenance of country roads; farm wells, windmills and pumps; principles of draft. *King:* Physics of Agriculture. *Davidson and Chase:* Farm Machinery and Farm Motors. *Second semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

4. FARM CROPS I. Forage crops, legumes and grasses; the special uses of these crops, as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plan for the rotation of soiling crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—The examination of samples of the standard varieties of grasses, clovers and other forage plants; the study of grass, clover and alfalfa seeds with reference to quality, purity and freedom from adulterants and weed seeds; the identification of seeds of noxious weeds which may be found in grass, clover or alfalfa seed. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

5. SOILS. The nature, functions, origin, texture, comparison, and kinds of soil; the relations of soil and water; air and sunlight; the treatment of soils to maintain fertility; and their cultivation in connection with the growing of crops. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

Senior College Courses

23. FARM CROPS II. The principal cereal crops—corn, wheat, oats, barley, rye, rice, sorghum, etc. *Hunt:* Cereals of America. Laboratory—The study of the matured plant of the different varieties of grain, grasses, and alfalfa; the

judging of grain and hay according to the commercial standards of perfection for pure-bred varieties; and the judging of alfalfa seeds. *Knight:* Judging and Commercial Grading of Small Grains and Hay. *First semester. Hours to be arranged. Four credits.* 101 Hatch Hall. Assistant Professor Knight.

26. FARM MACHINERY. The taking down and setting up of different types of field machinery; the practical application of mechanical theories and principles essential to agriculture. Lectures, outside reading, and topic work. *Second semester. Hours to be arranged. Three credits.* 101 Hatch Hall and Station Farm. Assistant Professor Knight.

27. FARM MANAGEMENT. The evolution of farming; the relation of capital and labor to farm management; the general management of implements and equipment; ownership versus rental of lands; the choice of a farm; systems of farming; farming compared with other lines of business; marketing problems; advertising; farm records and farm accounts; the management of fields, crops and manures. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor True.

28. IRRIGATION. A brief review of the history of irrigation, the development of irrigation law, and the doctrine of appropriation. A study of the relation of rainfall, evaporation and seepage to irrigation; the measurement of water upon the farm, the effect of irrigation upon the land and how to apply water beneficially to the growing crops. This is a study of irrigation problems from the water-user's point of view rather than that of the engineer. *Five times a week. First semester. Five credits.* 101 Hatch Hall. Mr. Peterson.

XXI. ANIMAL HUSBANDRY

PROFESSOR TRUE

Junior College Courses

1. BREEDS OF LIVE STOCK. The origin, development, characteristics, and uses of pure breeds of farm animals. For illustration the animals of the University Farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *Second semester. Hours to be arranged. Four credits.* 101 Hatch Hall. Professor True.

2. ANIMAL BREEDING. A discussion of the principles

ture, tillage and fertility; the plant—its relation to soil and climate, its propagation, growth and cultivation, and the kind of crops and their culture; the animal—its life, feeding and breeding. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

2. FARM ENGINEERING. The laws and principles which control the practice of agriculture, including the following subjects: The invention, history and development of farm machinery; principles of construction and operation, with a comparison of the different types or makes of machines of different classes according to their adaptation for special conditions and uses; friction and lubricants; construction and ventilation of farm buildings; strength of materials; construction and maintenance of country roads; farm wells, windmills and pumps; principles of draft. *King:* Physics of Agriculture. *Davidson and Chase:* Farm Machinery and Farm Motors. *Second semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

4. FARM CROPS I. Forage crops, legumes and grasses; the special uses of these crops, as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plan for the rotation of soiling crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—The examination of samples of the standard varieties of grasses, clovers and other forage plants; the study of grass, clover and alfalfa seeds with reference to quality, purity and freedom from adulterants and weed seeds; the identification of seeds of noxious weeds which may be found in grass, clover or alfalfa seed. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

5. SOILS. The nature, functions, origin, texture, comparison, and kinds of soil; the relations of soil and water; air and sunlight; the treatment of soils to maintain fertility; and their cultivation in connection with the growing of crops. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Assistant Professor Knight.

Senior College Courses

23. FARM CROPS II. The principal cereal crops—corn, wheat, oats, barley, rye, rice, sorghum, etc. *Hunt:* Cereals of America. Laboratory—The study of the matured plant of the different varieties of grain, grasses, and alfalfa; the

judging of grain and hay according to the commercial standards of perfection for pure-bred varieties; and the judging of alfalfa seeds. *Knight:* Judging and Commercial Grading of Small Grains and Hay. *First semester. Hours to be arranged. Four credits.* 101 Hatch Hall. Assistant Professor Knight.

26. FARM MACHINERY. The taking down and setting up of different types of field machinery; the practical application of mechanical theories and principles essential to agriculture. Lectures, outside reading, and topic work. *Second semester. Hours to be arranged. Three credits.* 101 Hatch Hall and Station Farm. Assistant Professor Knight.

27. FARM MANAGEMENT. The evolution of farming; the relation of capital and labor to farm management; the general management of implements and equipment; ownership versus rental of lands; the choice of a farm; systems of farming; farming compared with other lines of business; marketing problems; advertising; farm records and farm accounts; the management of fields, crops and manures. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor True.

28. IRRIGATION. A brief review of the history of irrigation, the development of irrigation law, and the doctrine of appropriation. A study of the relation of rainfall, evaporation and seepage to irrigation; the measurement of water upon the farm, the effect of irrigation upon the land and how to apply water beneficially to the growing crops. This is a study of irrigation problems from the water-user's point of view rather than that of the engineer. *Five times a week. First semester. Five credits.* 101 Hatch Hall. Mr. Peterson.

XXI. ANIMAL HUSBANDRY

PROFESSOR TRUE

Junior College Courses

1. BREEDS OF LIVE STOCK. The origin, development, characteristics, and uses of pure breeds of farm animals. For illustration the animals of the University Farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *Second semester. Hours to be arranged. Four credits.* 101 Hatch Hall. Professor True.

2. ANIMAL BREEDING. A discussion of the principles

underlying the art of breeding, the aim of which is to develop, maintain and improve the various breeds and types of farm animals and farm crops, studied with special reference to their application to breeding of farm animals. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor True.

4. STOCK JUDGING. Practice in judging live stock, to gain familiarity with the points of excellence in the various breeds of farm animals. *Craig:* Judging Live Stock. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor True.

Senior College Courses

23. FEEDING ANIMALS. The principles underlying, and problems connected with, the feeding of farm animals. *Smith:* Profitable Stock Feeding. *Second semester. Hours to be arranged. Two credits.* 101 Hatch Hall. Professor True.

25. LIVESTOCK REGISTRATION. The details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them; a study of pedigrees and how to keep herd records. *Second semester. Hours to be arranged. One credit.* 101 Hatch Hall. Professor True.

26. ADVANCED STOCK FEEDING. Lectures and laboratory, laboratory to consist of conducting actual feeding experiments with farm animals. *Second semester. Three credits.* Station Farm. Professor True.

27. ADVANCED STOCK JUDGING. The judging of animals in classes as at fairs and stock shows. Laboratory twice a week. *Prerequisites:* Animal Husbandry 1 and 4. *Hours and credits to be arranged.* Professor True.

XXII. VETERINARY SCIENCE

PROFESSOR MACK

Senior College Courses

21. VETERINARY SCIENCE. The more common ailments of domesticated animals, the maintenance of sanitary conditions, the methods of combating infection. *Second semester, daily. Hours to be arranged. Five credits.* 204 Hatch Hall. Professor Mack.

XXIII. DAIRYING

PROFESSOR ————

1. BUTTER MAKING. Practical butter making, including the use of the hand separator, the ripening of cream, churn-

ing, working and the putting up of butter for market, and the use of the Babcock tester. Lectures on the formation and composition of milk; ferments and their action; testing for purity and value; methods of manufacturing butter and cheese. *Hours and credits to be determined.*

XXIV. ENTOMOLOGY

PROFESSOR DOTEN

Junior College Courses

1. ECONOMIC ENTOMOLOGY. Lectures with field work on destructive insect pests. Discussion of their life histories, and the best means of combating them. *Second semester. Hours to be arranged. Three credits.* 103 Hatch Hall. Professor Doten.

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

Junior College Courses

1b. TEXTILES, The history and the hygiene of dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

2b. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

3b. HISTORY OF COOKERY. Food adulterations. Dietetic errors. Invalid cookery. Chafing-dish course. *Both semesters. Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

4b. DIET IN HEALTH AND DISEASE. *Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

XXVI. GEOLOGY

PROFESSOR SMITH

Junior College Courses

1c. ELEMENTARY GEOLOGY. A brief elementary course in Geology. To be taken concurrently with Mineralogy 1c. *Second semester, 10–11, T. Th. Two credits.* Mackay Mining Building. Professor Smith.

For description of other courses, see Geology, College of Engineering.

XXVII. MINERALOGY

ASSISTANT PROFESSOR JONES

Junior College Courses

1c. ELEMENTARY MINERALOGY AND PETROLOGY. A brief course in the determination of the common minerals and rocks. To be taken concurrently with Geology 1c. *Second semester, 2–4:30, M. One credit.* Mackay Mining Building. Assistant Professor Jones.

For description of other courses, see Mineralogy, College of Engineering.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND JACOBSON, ASSISTANT PROFESSOR DINSMORE, MR. KENNEDY AND MR. ANDERSON

Junior College Courses

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Designed for students who have not presented matriculation chemistry. *Both semesters. Four credits.* 206 Chemistry Building. Mr. Anderson.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. Four credits.* 101 Chemistry Building. Professor Adams and Mr. Anderson.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Anderson.

Senior College Courses

29. AGRICULTURAL CHEMISTRY. A lecture course on the application of chemical principles to farm economy. The following topics will be dealt with: Composition of plants, soil and fertilizers; soil fertility and soil toxicity; metabolic changes in animal and plant nutrition; the use of instruments and methods in agricultural analysis. *Prerequisites:*

Chemistry 1 and 2. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Professor Jacobson.

30. AGRICULTURAL ANALYSIS. A laboratory course to accompany Chemistry 29. This course includes the analysis of farm and dairy products, soils, fertilizers, stock foods and irrigation waters. *Both semesters, 2–4:30, T. W. Four credits.* 207 Chemistry Building. Professor Jacobson and Mr. Kennedy.

XXX. METEOROLOGY AND CLIMATOLOGY

PROFESSOR FERGUSSON

Junior College Courses

1. METEOROLOGY AND CLIMATOLOGY. Elements of Meteorology and Climatology including methods of observation and reduction of observations; errors and exposure of instruments; practical uses of meteorological data, weather maps, forecasting; periodicity; climatology of the United States. Lectures and recitations. *Second semester. Hours and credits to be arranged.* Station Library. Professor Fergusson.

Senior College Courses

21. ADVANCED COURSE. Physics of atmosphere, aerology; laboratory work including theory and testing of instruments; original experimental subjects. *Second semester. Hours and credits to be arranged.* Professor Fergusson.

XXXI. MATHEMATICS

PROFESSOR HASEMAN

Junior College Courses

1. ALGEBRA. A review of elementary algebra, quadratic equations, exponents and radicals, binomial theorem, mathematical induction, logarithms, progressions, determinants, theory of equations. *First semester. Hours to be arranged. Three credits.* 107 Morrill Hall. Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, the sphere. *Second semester, six weeks. Hours to be arranged. One credit.* 107 Morrill Hall. Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, twelve weeks. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy with a study of the solar system, the stars, comets, etc. *First semester. Hours to be arranged. Three credits.* 107 Morrill Hall. Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to certain problems of practical astronomy. The theory and the use of the transmit instrument. The determination of time, latitude, and longitude. *Second semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review of algebra and trigonometry; advanced parts of algebra to suit the needs of the students; geometry of the point, straight-line, transformation of coordinates, conic sections and the general equation of the second degree. Some time will be spent on the analytic geometry of three dimensions. *Both semesters. Hours to be arranged. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminant forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester. Hours to be arranged. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia, and centers of gravity. *Second semester. Hours to be arranged. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

25. HISTORY OF MATHEMATICS. Lectures and assigned reading on the history of the mathematical science. *First semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

For students who desire to pursue Mathematics as a major subject the following more advanced courses can be arranged: Theory of Equations; Advanced Calculus; Differential Equations; Theory of Numbers; Theory of the Functions of a Complex, Variable, etc.

XXXVI. MECHANIC ARTS

MR. POWERS, MR. PRESTON

Junior College Courses

1. BENCH WORK AND WOOD TURNING. *First semester. Hours to be arranged. Two credits.* 201 Mechanical Building. Mr. Powers.

2. FORGING AND BLACKSMITHING. *Second semester. Hours to be arranged. Two credits.* 5 Mechanical Building. Mr. Preston.

For description of other courses in Mechanic Arts, see College of Engineering.

XXXVI. CIVIL ENGINEERING

PROFESSOR BOARDMAN

Senior College Courses

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room, in plane and topographic surveying, computation, and mapping. *First semester. Recitations or lectures, 1–2. Field or drafting, 2–4:30, Th. F. Four credits.* 301 Stewart Hall. Professor Boardman.

35. RURAL ENGINEERING. Road building and maintenance, the construction of irrigation and drainage works for the farm, the construction of farm buildings, and the use of concrete in farm construction. *Second semester. Hours to be arranged. Four credits.* 301 Stewart Hall. Professor Boardman.

XXXVIII. MILITARY SCIENCE AND TACTICS

LIEUTENANT MCCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 12–1, M. T. W. Th. One credit.* Lieutenant McClure.

Junior College Courses

2. REGULATIONS. Recitations in Infantry, Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual for Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Four semesters, 12–1, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Four semesters, 12–1, F. One-half credit.* Lieutenant McClure.

XXXIX. PHYSICAL EDUCATION FOR MEN

LIEUTENANT MCCLURE

Junior College Courses

1. GYMNASIUM PRACTICE. *Hours to be arranged.* Gymnasium. Lieutenant McClure.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS MEIGHAN

Junior College Courses

NOTE—This course is offered to all young women of the University, and is required in the Freshman and Sophomore years as part of the regular work. Two (or three) hours each week are required of all students taking the course. Upon entering the class students are examined by a physician with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies are solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, and regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

A deposit of fifty cents at the beginning of the year is required of all students, the same to be returned at the close of the year to students returning keys to lockers.

Junior College Courses

1. CALISTHENICS. Free work, wands, Indian clubs, barbells, dumb-bells, bounding balls, march tactics, elementary folk and national dances, games, as basket-ball, captain ball,

[1] For exceptions, see Organization of Battalion of Cadets, page 51.

indoor baseball, hand ball and tennis. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

2. ADVANCED SWEDISH AND GERMAN GYMNASTICS, advanced folk and national dances, advanced work in clubs, bar-bells, and dumb-bells; light apparatus work; the horse; parallel bars, mat and buck; games, tennis, basket-ball, and indoor baseball. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

One credit is given for work in the Department of Physical Education.

COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

COLLEGE OF ENGINEERING

FACULTY

JOSEPH EDWARD STUBBS.....President
GEORGE J. YOUNG.....Professor of Mining and Metallurgy
JAMES GRAVES SCRUGHAM.....Professor of Mechanical Engineering
LOWE ABEEL MCCLURE.....Professor of Military Science and Instructor of Physical Education for Men.
W. S. TANGIER SMITH.....Professor of Geology and Mineralogy
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
LEON WILSON HARTMAN.....Professor of Physics
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
SANFORD CROSBY DINSMORE.....Assistant Professor of Chemistry
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GUSTAVUS SWIFT PAINE.....Instructor in English
GEORGE DELAFIELD POWERS.....Instructor in Mechanical Engineering
ALBERT W. PRESTON.....Instructor in Mechanical Engineering
WALTER S. PALMER.....Instructor in Mining and Metallurgy
WALTER W. ANDERSON.....Assistant in Chemistry
AUGUST HOLMES.....Student Assistant in Mathematics

AIM

The aim of the College of Engineering is to equip young men, who wish to share actively in the industrial development of the State and the Nation, with such knowledge of mining, mechanical, and civil engineering as is essential for entrance into these professions. The State Legislature has provided a liberal appropriation for the establishment of a course in Electrical Engineering. This course is now being arranged and will become effective January 1, 1912.

EQUIPMENT

For a general description of the equipment of the College of Engineering, see Mackay Mining Building, Mechanical Building, Electrical Building, Chemistry Building, Laboratories for Geology and Mineralogy, Laboratories of the

Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

CONDITIONS OF ADMISSION

1. Entrance to the Engineering Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work done here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to the Engineering Schools, the candidates must present English a and b; Mathematics a, b, c, d, and e; Language, other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units, one of which must represent advanced work; 6 other units[2], to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination, on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the department concerned.

[1] This requirement will go into effect August 1, 1914.
[2] August 1, 1914, these units will be reduced to 4.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of the College of Engineering, and have secured credit for the first two years' work required in their respective schools. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

THE BACCALAUREATE DEGREE

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical Engineering, upon students who have satisfactorily completed the full course of study in the School of Mechanical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

In all the schools, however, the requirements in Military Science must be met.

DEGREES OF MINING, MECHANICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, or Civil Engineer, is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Studies and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COURSES OF STUDY

FRESHMEN, ALL SCHOOLS

First Semester	Lab.	Lec.	Second Semester	Lab.	Lec.
English 1	..	3	English 1	..	3
Chemistry 3 and 4	2	2	Chemistry 3 and 4	2	2
Mathematics 7	..	3	Mathematics 7	..	3
Drawing 1 and 2	3	..	Drawing 4	3	..
Mechanic Arts 1 or 2 or 3	2	..	Mechanic Arts 1 or 2 or 3	2	..
Elective	..	3	Elective	..	3
Total		18	Total		18

SCHOOL OF MINES

SOPHOMORE YEAR

First Semester			Second Semester		
Mineralogy 1a	2	..	Mineralogy 1b	2	..
Chemistry 5	3	..	Chemistry 6	3	..
Mathematics 8	..	5	Mathematics 9	..	3
Physics 2 and 3	1	5	Physics 2 and 3	1	5
Elective	..	2	Mineralogy 3	..	2
			Elective	..	2
Total		18	Total		18

JUNIOR YEAR

First Semester			Second Semester		
Mining 31a and 32	1	1	Mining 31b and 32	2	1
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Geology 21	..	2
Geology 21	..	3	Geology 22 and 23a or 23b	1	2
Mathematics 20	..	3	Field Geology 24a	1	..
Mathematics 21	..	2	Mathematics 20	..	3
Mining 27		2	Mining 27	..	2
Total		18	Total		18

Summer School of Geology (Geology 24b), 4 weeks.....3 credits
Summer School of Mine Surveying (Civil Eng. 32), 4 weeks.....3 credits

SENIOR YEAR

First Semester			Second Semester		
Mining 21	..	4	Mining 22	..	4
Mining 23a	2	..	Mining 23b	2	..
Mining 28	..	4	Mining 29	..	4
Mining 30	2	..	Mining 30	2	..
Mining 36	..	1	Mining 36	..	1
Geology 25a	..	3	Mining 40. Thesis	2	..
Civil Engineering 28	..	2	Elective	..	3
Total		18	Total		18

SCHOOL OF MECHANICAL ENGINEERING

SOPHOMORE YEAR

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
Mechanical Engineering 1	..	2	Mechanical Engineering 1	..	2
Mechanic Arts 3	3	..	Mechanical Engineering 2	..	2
Physics 2 and 3	1	5	Mechanic Arts 3	3	..
Mathematics 8	..	5	Physics 2 and 3	1	5
Elective	..	2	Mathematics 9	..	3
			Drawing 4	..	2
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Electrical Engineering 21	..	3	Mechanical Engineering 23	..	2
Mathematics 20	..	3	Mechanical Engineering 24	..	2
Mathematics 21	..	2	Electrical Engineering 22	..	3
Drawing 25	3	..	Mathematics 20	..	3
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Drawing 26	3	..
Elective	..	1	Elective	..	1
Total		18	Total		18

SENIOR YEAR

First Semester			*Second Semester*		
Mechanical Engineering 25	..	4	Mechanical Engineering 26	..	2
Mechanical Engineering 30	1	1	Mechanical Engineering 27	..	2
Electrical Engineering 23	..	3	Mechanical Engineering 28	1	1
Civil Engineering 28	..	2	Electrical Engineering 24	..	2
Drawing 27	3	..	Electrical Engineering 25	..	2
Elective	..	4	Drawing 28	4	..
			Mechanical Engineering 40, Thesis	..	2
			Elective	..	2
Total		18	Total		18

SCHOOL OF CIVIL ENGINEERING

SOPHOMORE YEAR

First Semester			*Second Semester*		
Mineralogy 1a	2	..	Physics 2 and 3	1	5
Physics 2 and 3	1	5	Mathematics 9	..	3
Mathematics 8	..	5	Mechanical Engineering 1	..	2
Mechanical Engineering 1	..	2	Drawing 3a	1	..
Elective	..	3	Drawing 4	3	..
			Elective	..	3
Total		18	Total		18

JUNIOR YEAR

First Semester	*Lab.*	*Lec.*	*Second Semester*	*Lab.*	*Lec.*
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Civil Engineering 26	..	3
Mathematics 20	..	3	Civil Engineering 27	1	2
Mathematics 21	..	2	Mathematics 20	..	3
Electrical Engineering 21			Mathematics 21	..	2
or Geology 21	..	3	Elective	..	3
Elective	..	4			
Total		18	Total		18

Summer School of Mine Surveying (Civil Eng. 32), 4 weeks.....3 credits

SENIOR YEAR

First Semester			*Second Semester*		
Civil Engineering 23	..	4	Civil Engineering 24	4	1
Civil Engineering 25	2	3	Civil Engineering 30	..	2
Civil Engineering 28	..	2	Civil Engineering 31	..	2
Civil Engineering 33	1	2	Civil Engineering 33	2	1
Elective	..	4	Civil Engineering 40, Thesis	..	2
			Elective	..	4
Total		18	Total		18

Courses of Instruction

VI. English
XXVI. Geology
XXVII. Mineralogy
XXVIII. Chemistry
XXIX. Physics
XXXI. Mathematics
XXXII. Mining
XXXIII. Mechanical Engineering
XXXIV. Electrical Engineering
XXXV. Mechanic Arts
XXXVI. Civil Engineering
XXXVII. Drawing
XXXVIII. Military Science and Tactics
XXXIX. Physical Education for Men

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Junior College Courses

1. Composition and Rhetoric. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, Section 1, 9–10, Section 2, 10–11, daily. Three credits.* 5 Stewart Hall. Mr. Paine.

For description of other courses in English, see College of Arts and Science.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Senior College Courses

21. GENERAL GEOLOGY. The first semester's work deals chiefly with the dynamic and structural aspects of the subject, being a general discussion of geologic forces and their results. During the second semester an outline is given of the history of the earth, including diastrophic changes, stratigraphic relationships, and descriptions of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *First semester, 10–11, M. W. F. Three credits. Second semester, 10–11, M. F. Two credits.* Mackay Mining Building. Professor Smith.

22. ELEMENTARY PETROLOGY. Lectures on the classification, character and origin of rocks. *Prerequisites:* Geology 21; Mineralogy 1a, 1b, and 3. *Second semester, 1–2. Two credits.* Mackay Mining Building. Professor Smith.

23a. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 1–4, W. One credit.* Mackay Mining Building. Professor Smith.

23b. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen, and in the thin section with the microscope. *Prerequisites:* Mineralogy 24 and 25; Geology 21a. Geology 22 should be taken concurrently. *Second semester, 1–4, W. One credit.* Mackay Mining Building. Professor Smith.

24a. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite*: Geology 21. *Second semester. One credit.* Professor Smith.

24b. FIELD GEOLOGY. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably a mining camp, where both the surface and the underground geology may be investigated. The field for 1910 was the vicinity of Goldfield, Nevada. A concise report of the work, together with well-kept field notes, a finished geological map, and cross sections will be required of every

member of the class. *Prerequisites:* Geology 21, 22, and 24a. *Three credits.* Mackay Mining Building. Professor Smith and Assistant Professor Jones.

24c. FIELD GEOLOGY. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspects of the work will be given. *Prerequisite:* Geology 24b. *First semester. Hours to be arranged. One credit.* Mackay Mining Building. Professor Smith.

25a. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, nonmetallic minerals, and rocks used in the arts and industries, with description of typical examples from important mining regions. Lectures and recitations. *Prerequisites:* Geology 21, 22, and either 23a or 23b. *First semester. Hours to be arranged. Three credits.* Mackay Mining Building. Professor Smith.

25b. ECONOMIC GEOLOGY. An advanced course treating the modes of concurrence, origin, and distribution of metalliferous deposits, with a study of the important mining camps of North America. *Prerequisite:* Geology 25a. *Second semester. Hours to be arranged. Three credits.* Mackay Mining Building. Professor Smith.

40. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Smith.

60. GRADUATE COURSE. Original investigation of geologic problems with seminar for discussion of current geological literature and special topics. *Credits and hours to be arranged.* Mackay Mining Building. Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Junior College Courses

1a. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

1b. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisites:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Two credits. Hours to be arranged.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–4:30, W. Two credits.* Mackay Mining Building. Professor Smith.

24. OPTICAL PROPERTIES OF MINERALS. Lectures, *Prerequisites:* Mineralogy 1a and b, or 2; Physics 2 and 3. *First semester, 1–2, M. T. Two credits.* Mackay Mining Building. Professor Smith.

25. OPTICAL PROPERTIES OF MINERALS. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. Mineralogy 24 should be taken concurrently. *First semester, 1–4, F. One credit.* Mackay Mining Building. Professor Smith.

60. GRADUATE COURSE. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith and Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, ASSISTANT PROFESSOR DINSMORE, MR. ANDERSON

Junior College Courses

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to

the explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Anderson.

5. QUANTITATIVE ANALYSIS. Training in general methods of manipulation will be given in both gravimetric and volumetric analysis. *Prerequisites:* Chemistry 3 and 4. *First semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams.

5a. ELEMENTARY FUEL ANALYSIS. Designed particularly for mechanical engineers. *First semester, 2–4:30, Th.* Chemistry Building. Professor Adams and Professor Dinsmore.

6. QUANTITATIVE ANALYSIS. Special determination in analytical chemistry will be assigned to meet the demands of the individual students and the departments in which the degree is sought. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams.

For description of other courses in Chemistry, see College of Arts and Science.

XXIX. PHYSICS

PROFESSOR HARTMAN, MR. ————

Junior College Courses

1. GENERAL REVIEW. A course in general physics giving University credit to students entering the University without condition but with a deficiency in this subject. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely qualitative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurements. *Prerequisite:* Plane Geometry; a knowledge of trigonometry also is desirable. *Both semesters. Lectures, 10–11, daily; Laboratory, 2–4:30, F. Twelve credits.* 5, 6, and 11 Physics Building. Professor Hartman.

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisites:* Mathematics 1 and 7; Physics a or Physics 1. *Both semesters, 9–10, daily. Ten credits.* 5, 6, and 11 Physics Building. Professor Hartman.

3. PHYSICAL MEASUREMENTS. Experimental work in heat

and mechanics, sound and light, electricity and magnetism of distinctly quantitative character is done. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisites:* Mathematics 1 and 7; Physics 1. *Both semesters, 2–4:30, W. Th. Two credits.* 5 and 6 Physics Building. Professor Hartman.

Senior College Courses

21. ELECTRICAL MEASUREMENTS. Precise measurement of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisites:* Physics 1, 2, and 3. *Second semester, 2–4:30, T. W. One or two credits.* 5 and 6 Physics Building. Professor Hartman and Mr.———

40. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. Both *semesters. Hours and credits to be arranged.* Professor Hartman.

For other courses in Physics, see College of Arts and Science.

XXXI. MATHEMATICS

PROFESSOR HASEMAN

Junior College Courses

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review of algebra and trigonometry, advanced parts of the algebra to suit the needs of the student, geometry of the point, straight line, transformation of coordinates, conic sections, and the general equation of the second degree. Some time will be spent on the analytic geometry of three dimensions. *Both semesters. Hours to be arranged. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminate forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester. Hours to be arranged. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to the methods of integration. This is followed by the application of integration to areas of plane curves, areas of surfaces,

volumes, moments of inertia, and centers of gravity. *Second semester. Hours to be arranged. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

20. ANALYTIC MECHANICS. Work in the resolution of forces, center of gravity, moment of inertia, laws of motion, friction, and dynamics of machinery. Emphasis is placed on practical numerical examples to illustrate the theory. *Both semesters. Hours to be arranged. Six credits.* 107 Morrill Hall. Professor Haseman.

21. MECHANICS OF MATERIAL. Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *Both semesters. Hours to be arranged. Four credits.* 107 Morrill Hall. Professor Haseman.

For description of other courses in Mathematics, see College of Arts and Science.

XXXII. MINING AND METALLURGY

PROFESSOR YOUNG, MR. PALMER

Senior College Courses

21. MINING (General). Excavation, explosives, tunneling, boring, shaft-sinking. *First semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

22. MINING (General). Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, mine equipment and management. *Second semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

23a. MINING (Laboratory). Problems in engineering and in the design of mining and metallurgical machinery. *First semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor Young.

23b. MINING (Laboratory). Continuation of Mining 23a. *Second semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor Young.

24. MINING (Laboratory). Practice in sharpening and tempering hand and machine drills, in the use of these, and in forging and welding. *First semester (alternate years).*

Hours to be arranged. Two credits. Mining Laboratory and Forge Shop. Professor Young.

25. EXCURSIONS. During the year two trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit. The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formation is also done in order to facilitate interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide, and reduction plants. Reports of observations, with sketches, are required of each student. (For Seniors, School of Mines.) Professor Young.

26. ENGINEERING CONTRACTS AND SPECIFICATIONS. *Second semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Professor Young.

27. METALLURGY (General). Lectures and recitations. Physical properties of the more important metals and alloys; physical properties of the structural metals and alloy steels; the metallographical study of steels. *Prerequisites:* Chemistry 1, 2, 3; Mineralogy 1. *Both semesters. Four credits.* Lecture Room, Mackay Mining Building. Professor Young and Mr. Palmer.

28. METALLURGY (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *First semester, 10–11, M. T. Th. F. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

29. METALLURGY (Copper, Lead, Zinc). Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *Second semester, 10–11, M. T. Th. F. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

30. METALLURGY (Laboratory). A series of experiments is given which is designed to supplement, in part, the classroom work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to supplement the small-scale experiments. *Prereq-*

uisites: Metallurgy 27; Chemistry 5 and 6. *First semester, 2–4:30, W. Th. Second semester, 2–4:30, Th. F. Four credits.* Metallurgical Laboratory, Mackay Mining Building. Professor Young.

31a. ASSAYING. Lectures and recitations. Methods of assaying, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying. *Prerequisites:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Mr. Palmer.

31b. ASSAYING. Lectures and recitations. Chemistry in assay slags and slag calculation. Full discussion of the assay of difficult ores and metallurgical products, the fire assay of lead, platinum, bismuth, tin, and mercury, the errors and losses in fire assay. *Second semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Mr. Palmer.

32. ASSAYING (Laboratory). Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miner's pan, horn, and batea. *Prerequisites:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. One credit. Second semester. Two credits. Hours to be arranged.* Assaying Laboratory, Mackay Mining Building. Mr. Palmer.

33. FIRST AID AND HYGIENE. Four lectures. Required of all Seniors, School of Mines. *Second semester. Hours to be arranged.* Professor Frandsen.

34. MINING LAW. Four lectures. *Second semester. Hours to be arranged.*

35. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work must cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations, and to put at least one whole vacation period into practical work.

36. MINING CONFERENCE. Discussion of laboratory and classroom work; technical literature, student papers and quizzes. Credit one unit. *Both semesters. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Young.

37. METALLURGICAL CALCULATIONS. A discussion of the principles of thermo-chemistry and a series of problems

illustrating them. *Elective. Second semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Mr. Palmer.

38. The purchase, installation, and operation of mining and metallurgical machinery. *Elective. Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Young and Mr. Palmer.

39. MILL AND SMELTER ANALYTICAL METHODS. *Elective. First semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Mr. Palmer.

40. THESIS. Each Senior student is required to present a thesis on some subject in mining or metallurgy or related branch of engineering. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Young.

XXXIII. MECHANICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. POWERS

Junior College Courses

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers. *Both semesters, 9–10, T. Th. Four credits.* 101 Mechanical Building. Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits.* 101 Mechanical Building. Mr. Powers.

Senior College Courses

23. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *Second semester, 1–2, T. W. Two credits.* 101 Mechanical Building. Professor Scrugham.

24. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horsepowers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boil-

ers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 10–11, T. Th. Two credits.* 101 Mechanical Building. Professor Scrugham.

25. STEAM ENGINE. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10, M. W. Th. F. Four credits.* 101 Mechanical Building. Mr. Powers.

26. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases and oil is discussed, and comparative costs and efficiencies considered. *Second semester, 9–10, M. F. Two credits.* 101 Mechanical Building. Professor Scrugham.

27. POWER PLANTS. The mechanical engineering of power plants is here presented in a nonmathematical way, and the practical and experimental side of machinery appliances and economical auxiliaries employed are shown. *Second semester. Hours to be arranged. Two credits.* 101 Mechanical Building. Professor Scrugham.

28. VALVE GEARING. A study of the various forms of engine valves, link motions, radial gears, and shaft regulation. Each student must design some form of standard engine-valve and governor, the data being taken from trade catalogues and engines actually in use. *Second semester, 11–12, 2–4:30, Th. Two credits.* 101 Mechanical Building. Mr. Powers.

30. ENGINEERING LABORATORY PRACTICE. This course covers the various methods of conducting and working up test, determining efficiencies, driving powers, etc., and is supplemented by practical tests on a number of pieces of apparatus. *First semester, 11–12, 2–4:30, F. Two credits.* 101 Mechanical Building. Professor Scrugham.

31. ADVANCED LABORATORY PRACTICE. This course consists of an extended series of experimental tests on power plants, locomotives, train-lighting systems, etc. *Elective. Hours to be arranged. Two credits.* Professor Scrugham.

39. INSPECTION VISITS. The most important engineering establishments in the vicinity are visited in order that the student may make a study of modern structures and methods

in manufacture. *Open only to Juniors and Seniors, School of Mechanical Engineering.* Professor Scrugham.

40. THESIS COURSE. The designing of a machine or the original investigation of some subject congenial to the student's taste and included in the scope of curriculum. *Second semester. Hours to be arranged. Two credits.* 202 Mechanical Building. Professor Scrugham.

XXXIV. ELECTRICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. POWERS

Senior College Courses

21. DIRECT CURRENT MACHINERY. Fundamental principles, theory, characteristics, operation, and construction of dynamos, motors, storage batteries, etc., supplemented by laboratory work. *Prerequisite:* Physics 2. *First semester, 10–11, M. W. F. Three credits.* 101 Mechanical Building. Professor Scrugham.

22. ELECTRIC LIGHTING, WIRING AND DISTRIBUTION. *Prerequisite:* Electrical Engineering 21. *Second semester. 10–11, M. W. F. Three credits.* 101 Mechanical Building. Professor Scrugham.

23. ALTERNATING CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* Electrical Engineering. 21. *First semester, 11–12, W. Th. F. Three credits.* 101 Mechanical Building. Mr. Powers.

24. APPLIED ELECTRICITY. Application of electricity to machine tools, pumps, hoists, cranes, railways, etc. *Second semester, 11–12, M. T. Two credits.* 101 Mechanical Building. Professor Scrugham.

25. ELECTRIC LABORATORY. The use and care of electrical instruments. Test of generators, motors, transformers, etc. *Second semester, 2–4:30, M. F. Two credits.* 101 Mechanical Building. Mr. Powers.

XXXV. MECHANIC ARTS

MR. POWERS, MR. PRESTON

Junior College Courses

1. WOOD WORK. The students are taught the use of hand and machine tools and the most approved processes and methods followed in engineering construction. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning,

dovetailing, framing, paneling, and the general use of carpenter's tools. The wood turning involves the various principles of lathe work in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. *Both semesters, 2–4:30, M. T. Four credits.* 201 Mechanical Building. Mr. Powers.

2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case-hardening, and the making of a complete set of machine cutting tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, M. T; Section 2, 8–12, S. Four credits.* 101 Mechanical Building. Mr. Preston.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface chipping, squaring, and fitting, round filing, sawing, scraping, and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work, and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, M. T. Four credits.* 101 Mechanical Building. Mr. Preston.

XXXVI. CIVIL ENGINEERING

PROFESSOR BOARDMAN

Senior College Courses

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room, in land surveying, topography, hydrography, mining, and city surveying. *Both semesters. Recitations or Lectures, 11–12, Field or Drafting, 2–4:30, Th. F. Eight credits.* 302 Stewart Hall. Professor Boardman.

23. STRUCTURAL ANALYSIS. Computation of stresses in

the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester. Hours to be arranged. Four credits.* 302 Stewart Hall. Professor Boardman.

24. STRUCTURAL DESIGN. General features and detail of design, estimates of weight, and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester. Hours to be arranged. Drafting, four credits; Lecture, one credit.* 302 Stewart Hall. Professor Boardman.

25. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester, 1–2, M. T., 9–10, W. Field or Drafting, 2–4:30, M. T. Five credits.* 302 Stewart Hall. Professor Boardman.

26. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester. Hours to be arranged. Three credits.* 302 Stewart Hall. Professor Boardman.

27. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and estimates its cost. *Second semester. Lecture, two credits; Drafting, one credit.* 302 Stewart Hall. Professor Boardman.

27a. MASONRY CONSTRUCTION. Additional work, drafting or laboratory testing. *Hours to be arranged. One to three credits*, depending upon the time put in and work done. 302 Stewart Hall. Professor Boardman.

28. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water, and the laws of its flow through openings and in channels of various kinds. *First semester. Hours to be arranged. Two credits.* 302 Stewart Hall. Professor Boardman.

29. GRAPHIC STATICS. A study of the principles of graphic statics and their application in ascertaining the stresses in framed structures. *First semester, 8–10, M. F. Two credits.* 302 Stewart Hall. Professor Boardman.

29a. GRAPHIC STATICS. Additional work in graphics of

bridge trusses. *One to three credits, depending upon work done.* 302 Stewart Hall. Professor Boardman.

30. WATER SUPPLY. A study of public water supplies and their sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester. Hours to be arranged. Two credits.* 302 Stewart Hall. Professor Boardman.

31. IRRIGATION ENGINEERING. A thorough study of the questions involved in the collection, storage, and distribution of water for irrigation purposes. *Second semester. Hours to be arranged. Two credits.* 302 Stewart Hall. Professor Boardman.

32. MINE SURVEYING. At the close of the college year the Junior Class in Surveying takes a four weeks' trip to some mining district in Nevada. Here one of the mines is surveyed and mine maps constructed. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. *Four weeks. Three credits.* Professor Boardman.

33. REINFORCED CONCRETE. Its principles and applications. *First semester. Lecture, two credits; Drafting, one credit. Second semester. Lecture, one credit; Drafting, two credits.* 302 Stewart Hall. Professor Boardman.

34. WATER POWER ENGINEERING. A study of the more important problems of water-power development including characteristics of hydraulic motors affecting design, selection and installation. *Hours to be arranged. Three credits.* 302 Stewart Hall. Professor Boardman.

40. THESIS. *Second semester. Two credits. Hours to be arranged.* 302 Stewart Hall. Professor Boardman.

XXXVII. DRAWING

PROFESSOR SCRUGHAM, PROFESSOR BOARDMAN, ASSISTANT PROFESSOR LEWERS, MR. POWERS, MR. PRESTON

Junior College Courses

1. FREEHAND DRAWING. Perspective sketches of machines; lettering; sketches of projections of machines. *First semester, 10–11, daily. Two credits.* Physics Building. Assistant Professor Lewers.

2. MECHANICAL DRAWING. Plates, machine parts, etc. *First semester. Section 1, 9–10, Section 2, 10–11, daily. One credit.* Physics Building. Assistant Professor Lewers.

3. ELEMENTARY MACHINE DESIGN. Drawing and design of machine parts, modern shop arrangement, etc. *Second semester, 8–9, daily. Three credits.* 304 Morrill Hall. Mr. Preston.

3a. TOPOGRAPHICAL DRAWING AND MAPPING. *Second semester. Hours to be arranged. One credit.* 301 Stewart Hall. Professor Boardman.

4. DESCRIPTIVE GEOMETRY. *Second semester, 10–11, daily. Two to three credits.* 304 Morrill Hall. Mr. Powers.

Senior College Courses

25. MACHINE DESIGN. *First semester, 2–4:30, M. T. W. Three credits.* 101 Mechanical Building. Professor Scrugham.

26. STEAM BOILER DESIGN. *Second semester, 2–4:30, M. T. W. Three credits.* 101 Mechanical Building. Professor Scrugham.

27. ADVANCED MACHINE PARTS. *First semester, 2–4:30, W. Th. F. Second semester, 2–4:30. Three credits.* 101 Mechanical Building. Professor Scrugham.

28. ELECTRICAL DESIGN. *Elective. Second semester, 2–4:30, T. W. F. Three credits.* 101 Mechanical Building. Professor Scrugham.

XXXVIII. MILITARY SCIENCE AND TACTICS

LIEUTENANT MCCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. Prescribed for all male students.[1] *Eight semesters, 12–1, M. T. W. Th. One credit.* Lieutenant McClure.

Junior College Courses

2. REGULATIONS. Recitations in Infantry, Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual for Guard Duty. Prescribed for Freshmen and Sophomores.[1] *Four semesters, 12–1, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. Prescribed for

[1] For exceptions, see Organization of Battalion of Cadets, page 51.

Juniors and Seniors.[1] *Four semesters, 12–1, F. One-half credit.* 108 Morrill Hall. Lieutenant McClure.

XXXIX. PHYSICAL EDUCATION FOR MEN

LIEUTENANT MCCLURE

Junior College Courses

1. GYMNASIUM PRACTICE. *Hours to be arranged.* Gymnasium. Lieutenant McClure.

[1] For exceptions, see Organization of Battalion of Cadets, page 51.

COLLEGE OF EDUCATION

COLLEGE OF EDUCATION

FACULTY

JOSEPH EDWARD STUBBS.....President
ROBERT LEWERS.....Vice-President, Professor of Elementary and International Law
JAMES EDWARD CHURCH, JR.....Professor of Latin Language and Literature
LAURA DE LAGUNA.....Professor of the Romanic Languages
JEANNE ELIZABETH WIER.....Professor of History
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY[1].....Professor of Botany and Horticulture
ROMANZO ADAMS.....Professor of Education and Sociology and Acting Professor of Economics
W. S. TANGIER SMITH.....Professor of Geology and Mineralogy
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
LOWE ABEEL MCCLURE.....Professor of Military Science and Tactics, and Instructor in Physical Education for Men
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
JOHN CALVIN WATSON.....Professor of Greek
GEORGE ORDAHL.....Professor of Psychology and Education
KATE BARDENWERPER.....Assistant Professor of Domestic Science
SANFORD CROSBY DINSMORE.....Assistant Professor of Agricultural Chemistry
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GUSTAVUS SWIFT PAINE.....Instructor in English
HELEN ANN MEIGHAN.....Instructor in Physical Education for Women
CARL SAWVELL[2].....Instructor in Vocal Music
CHARLES LEROY BROWN.....Assistant in Biology
WALTER W. ANDERSON.....Assistant in Chemistry
NELLIE GODBOLT.....Assistant in History
AUGUST HOLMES.....Student Assistant in Mathematics

[1] Absent on leave, 1910–11.
[2] Resigned, June 1, 1911.

FOUNDATION

The Legislature shall have power to establish Normal Schools, and such different grades of schools from the primary department to the University as in their discretion they may deem proper. *State Constitution, Article XI, Section 5.*

The College of Education, which is, in purpose, the successor of the State Normal School and which still is, from the legal point of view, the State Normal School, represents a development and enlargement of the work of the University in the professional education of teachers for the public schools.

The public school system of Nevada comprises the primary school, the grammar school, and the high school. The College of Education in its various courses prepares teachers for these schools. As a coordinate college of the University it possesses the advantages of well-equipped libraries and laboratories.

Among the more specific aims of the College of Education are the following:

To educate teachers for the public schools.

To promote the study of educational science.

To give unity to the educational system of the State.

To promote the professional interests of teachers.

THE TRAINING SCHOOL

Beginning with the academic year 1911–12, the College of Education will conduct its training school in connection with the Orvis Ring School, a public elementary school situated near the University Campus. Students will do practical teaching continuously throughout the year and under careful supervision.

COURSES OF STUDY

Two courses of study are offered in the College of Education:

1. An elementary or Junior College course of two years designed to prepare teachers to teach in elementary schools.

2. An advanced or Senior College course of two years designed to prepare teachers to teach in high schools.

CONDITIONS OF ADMISSION

1. Entrance to the College of Education shall be by examination, excepting that a graduate of an accredited school

will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the College of Education must pass an examination in English composition, whether from the accredited school or not. The examination will be held in August of each year.

4. All new students of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

ADMISSION REQUIREMENTS

Subjects with Credits [1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
4.	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to the College of Education, the candidates must present:

1. English a and b.
2. Mathematics a and b.
3. Four units—either (a), (b) or (c) as given below:
 (a) Latin, four units.
 (b) History, two units; language other than English, two units.
 (c) Mathematics c; science, one unit; language other than English, two units.
4. Elective, seven units.

REQUIREMENTS FOR GRADUATION

JUNIOR COLLEGE

Students who satisfy the entrance requirements and who complete the work of the Junior College as outlined below will be graduated with the title Associate, and will receive diplomas entitling the holders to State teachers' certificates of elementary grade.

FIRST YEAR

	1st Sem.	*2d Sem.*
Education 1	3	3
Hygiene 1	4	4
English 1	3	3
Art 5a	1	1
Music 1	1	1
Elective	3	3
Total	15	15

SECOND YEAR

Education 2	2	2
Education 3	5	5
Art 5a	1	1
Music 2	1	1
Elective	6	6
Total	15	15

SENIOR COLLEGE

ENTRANCE REQUIREMENTS

Graduates of the Junior College of Education shall be eligible to enter the Senior College. Graduates of the Junior College of the College of Arts and Science and of the Junior College of the College of Agriculture shall be eligible to enter the Senior College of the College of Education, provided they shall have taken Hygiene 1, 8 units, and Psychology 1 and 2, 6 units.

Students coming from other institutions of learning may gain admission by meeting the same or equivalent requirements.

DIPLOMAS AND DEGREES

Students who satisfy the entrance requirements and who complete the work of the Senior College as outlined below will be graduated and will receive diplomas entitling them to State teachers' certificates of the high-school grade.

The work is so arranged that a student may register in both the College of Education and in the College of Arts and Science. A student who complies with the demands of both colleges may be graduated and receive a diploma from both.

A student who is graduated from both shall receive but one degree—the degree of Bachelor of Arts from the College of Arts and Science. A student who graduates from the College of Education only, will receive the degree of Bachelor of Science in Education.

SPECIAL COURSES

Special courses in music, drawing and physical culture will be given for students who wish to prepare for such special work. Only persons who have natural aptitude for such work, and who have had some training along these lines will be permitted to undertake special courses. Anyone desiring this work should communicate with the Department of Education in advance.

REQUIREMENTS FOR RECOMMENDATION IN HIGH-SCHOOL SUBJECTS

The minimum amount of work required in each of the following subjects in order to receive from the University a recommendation for teaching those subjects in high schools is as follows:

Mathematics—Six units, based on four years of high-school study, or twelve units based on two or three years of high-school study.

Latin—Fourteen units, including prose composition based on four years of high-school study.

French—Courses 1, 2, 3, and 4, based on no entrance French.

German—Courses 1, 2, 4, and 5, based on no entrance German.

English—Eighteen units, based on two or more years of high-school work.

History—Courses 1 and 2 and further work amounting to eight units. This requirement will be reduced in the case of students whose high-school preparation is good.

Biology—Sixteen units, including Hygiene 1.

Physics—Twelve units, based on one year of high-school work.

Chemistry—Courses 2 and 4, based on one year's high-school work.

COURSE OF STUDY

The course of study includes, in addition to the requirements of Military Science or Physical Education for Women, work aggregating 120 semester-units[1] credit as follows:

1. Ten units in Education.

2. Sufficient work in at least two important high-school subjects to secure from the University a teacher's recommendation for those subjects.

3. Elective—The student must elect in two departments not fewer than twenty-four nor more than thirty-six units, and not more than twenty-four units shall be in any one department. Courses in the College of Education, in the College of Arts and Science, and in the Departments of Agriculture and Horticulture will be accepted as meeting this requirement. (The choice between twenty-four and thirty-six units and between twelve and twenty-four units rests with the student.)

4. Free Elective—The remaining units necessary to make a total of sixty units may be freely elected from the courses offered in the College of Arts and Science and in the College of Agriculture, and from courses in Mineralogy, Metallurgy, Assaying, Agricultural Chemistry, and Surveying, provided the requirements as to prerequisites in the various departments are met.

COURSES OF INSTRUCTION

The courses in Psychology and in Education, and other required courses are as follows:

VI. English	XIV. Psychology
VII. Music	XVI. Hygiene
VIII. Art	XXXVIII. Military Science and Tactics
XIII. Education	XL. Physical Education for Women

VI. ENGLISH LANGUAGE AND LITERATURE

MR. PAINE

Junior College Courses

1. COMPOSITION AND RHETORIC. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 9–10,*

[1] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

Section 2, 10–11, daily. Six credits. 102 Stewart Hall. Mr. Paine.

VII. MUSIC

CARL SAWVELL[1]

Junior College Courses

1. NOTATION AND SIGHT SINGING. The elements of vocal music, one period each week being given to choral practice with the University Chorus. *Both semesters. Hours to be arranged.* 206 Morrill Hall. Mr. Sawvell.

2. METHODS OF TEACHING. The teaching of public-school music, together with a brief course of musical history. *Both semesters, 2–3, T. Th.* 206 Morrill Hall. Mr. Sawvell.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Junior College Courses

5*a*. TEACHERS' COURSE. Attention is given to the observation, the delineation, and color of forms in nature, to ornamental design, to the conventionalizing of plant forms, and to harmony of color. *Both semesters. Hours to be arranged. One credit.* Physics Building. Miss Lewers.

XIII. EDUCATION

PROFESSOR ADAMS, PROFESSOR ORDAHL

Junior College Courses

1. SCIENCE OF EDUCATION. This is an introductory course to the general field of education. The purpose is to develop a mental attitude of sane inquiry and to gain a fair perspective of education as a whole. Some of the more elementary problems of life are considered at first-hand, in relation to present school and social systems. Problems will be discovered and formulated for treatment in the following courses. *Both semesters. Hours to be arranged. Six credits.* 101 Stewart Hall. Professor Ordahl.

2. Lectures and reading designed to assist the student in organizing his work in the training school and in correlating his practical work with his study of educational principles. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

3. TRAINING COURSE. Practical work in teaching carried on in the Orvis Ring School under the direction and super-

[1] Resigned, June 1, 1911.

vision of the Department of Education. All students who take this course must arrange their other work in such a way as to permit of regular work five days in the week. Every lesson must be carefully planned in advance of its assignment to the pupils and all plans must be submitted to a supervisor of the training school for criticism and suggestions. Only those students who show a disposition to do their best and who are able to achieve reasonable success in teaching will be permitted to continue in this course. *Both semesters. Hours to be arranged. Ten credits.* Orvis Ring School. Professor Ordahl and Supervisors.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. This course deals with the development of the thought process, the formation of ideals, and the social natures of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

23. HISTORY OF EDUCATION. A brief survey of the principal educational systems of the world. *First semester. Hours to be arranged. Three credits.* 305 Morrill Hall. Professor Adams.

24. SOCIAL ASPECTS OF EDUCATION. A study of education as utilizing the resources of civilization for the development of the individual and for his adjustment to the demands of the social order. *Second semester. Hours to be arranged. Three credits.* Professor Adams.

XIV. PSYCHOLOGY

PROFESSOR ORDAHL

Junior College Courses

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes and the emotional life. *Prerequisite:* Hygiene 1, or its equivalent. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

2. COMPARATIVE PSYCHOLOGY. The parallels between animal and human behavior, the learning process, the fundamental animal and human instincts in relation to individual and racial development. *Second semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings, and laboratory work. *Second semester. Hours to be arranged. Three credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. CHILD AND ADOLESCENT PSYCHOLOGY. Development of the nervous system and growth of the body are traced in connection with mental development. Types of child and adolescent mind are considered in relation to problems of social adjustment. Intellectual and emotional difficulties peculiar to child and youth are treated in their relation to clear thinking and moral efficiency. *Second semester, 8–9, T. Th. Two credits.* 101 Stewart Hall. Professor Ordahl.

22. ABNORMAL PSYCHOLOGY. The pathological aspects of consciousness; arrested mental development in children. The various forms of insanity and their causes. Hallucinations and illusions. *First semester. Hours to be arranged. Two credits.* Professor Ordahl.

23. PSYCHOLOGY OF SUGGESTION. Normal and abnormal suggestion; symptoms and conditions of hypnosis; phenomena of dual personality; educational uses of suggestion. Examination of mind and faith cure. *Two credits. Hours to be arranged.* Professor Ordahl.

24. ESTHETICS. Development of the ideas of beauty. The psychological foundations of esthetic appreciation. *Second semester. Hours to be arranged. Three credits.* Professor Ordahl.

Courses 22, 23, and 24 will be given only on application of four or more students.

25. ETHICS. In this course ethics is considered a branch of psychology. Present standards of moral and ethical conduct are treated in the light of historical development, and interpreted from a psychological standpoint. *First semester. Hours to be arranged. Two credits.* 101 Stewart Hall. Professor Ordahl.

XVI. HYGIENE

PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and

demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. ***Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, T. F. Four credits.*** 101 Stewart Hall. Professor Frandsen and Mr. Brown.

XXXVIII. MILITARY SCIENCE AND TACTICS

LIEUTENANT MCCLURE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. ***Prescribed for all male students.***[1] ***Eight semesters, 12–1, M. T. W. Th. One credit.*** Lieutenant McClure.

Junior College Courses

2. REGULATIONS. Recitations in Infantry, Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual for Guard Duty. ***Prescribed for Freshmen and Sophomores.***[1] ***Four semesters, 12–1, F. One credit.*** Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. ***Prescribed for Juniors and Seniors.***[1] ***Four semesters, 12–1, F. One-half credit.*** Lieutenant McClure.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS MEIGHAN

NOTE—This course is offered to all young women of the University, and is required in the Freshman and Sophomore years as part of the regular work. Two (or three) hours each week are required of all students taking the course. Upon entering the class students are examined by a physician with particular attention to the lungs and heart action, and information concerning the general health and inherited tendencies are solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium make it possible to obtain these results. Women taking this course will be obliged to provide

[1] **For exceptions, see Organization of Battalion of Cadets, page 51.**

themselves with gymnasium suits, consisting of blouse-waist and bloomers, and regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

A deposit of fifty cents at the beginning of the year is required of all students, the same to be returned at the close of the year to students returning keys to lockers.

Junior College Courses

1. CALISTHENICS. Free work, wands, Indian clubs, bar-bells, dumb-bells, bounding balls, march tactics, elementary folk and national dances, games, as basket-ball, captain ball, indoor baseball, hand ball and tennis. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

2. ADVANCED SWEDISH AND GERMAN GYMNASTICS, advanced folk and national dances, advanced work in clubs, bar-bells, and dumb-bells; light apparatus work; the horse; parallel bars, mat and buck; games, tennis, basket-ball, and indoor baseball. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

One credit is given for work in the Department of Physical Education.

ROSTER OF STUDENTS

September, 1910—March, 1911

RECIPIENTS OF SCHOLARSHIPS AND HONORS

THE UNIVERSITY GOLD MEDAL

Audrey W. Ohmert
School of Liberal Arts

Dorothy Frances Parker
School of Liberal Arts

THE F. O. NORTON SCHOLARSHIP

Daniel E. Bruce
Mackay School of Mines

THE SCHOLARSHIP FROM A FRIEND OF THE UNIVERSITY

Cecil W. Creel
School of Agriculture

Rowena A. Glass
School of Liberal Arts

PRESIDENT'S SCHOLARSHIP

Pearl Duncan
State Normal School

REGENTS' SCHOLARSHIPS

W. W. Anderson
Mackay School of Mines

Ethel R. Thompson
School of Liberal Arts

Frank Hobbins
Mackay School of Mines

THE PHILO C. BENNETT SCHOLARSHIP

Lydia C. Colyer
School of Liberal Arts

Shigeyasu Yamauchi
School of Liberal Arts

GRADUATES

Diplomas and Degrees were awarded on Commencement Day, May 17, 1910, as follows:

MASTER OF ARTS

Dorothy Elizabeth Singer

MASTER OF SCIENCE

Eliza Henrietta Overman

BACHELOR OF ARTS

Lydia Elizabeth Colyer
Helen Fulton
Hazel Pearl Lacombe
Audrey Winifred Ohmert
Frances Dorothy Parker
Irene Maude Conkey
Lulu Belle Hurley
Irene Myrtle Mack
Alice Woodward O'Brien
Maude Amanda Sawin
Shigeyasu Yamauchi

BACHELOR OF SCIENCE IN GENERAL SCIENCE

Margaret Elizabeth Mack

BACHELOR OF SCIENCE IN MINING ENGINEERING

Clayton Alfred Bennett
Marion Henry Foss
William Henry Goldsworthy
Dudley Denison Homer
Clyde Stuart McKenzie

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Donald Miller Bird
George L. Curnow
Ernest Deal Mack

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

James Archibald Miller
Nicholas Louis Rossi
John Ernest Sears

BACHELOR OF SCIENCE IN AGRICULTURE

Wallace DuBois Alexander

NORMAL SCHOOL DIPLOMAS

Advanced Course

Irene Maude Conkey
Hazel Pearle Larcombe
Irene Myrtle Mack
Maude Amanda Sawin
Lulu Belle Hurley
Margaret Elizabeth Mack
Audrey Winifred Ohmert
Alice Woodward O'Brien

Elementary Course

Bertha Esther Cliff
Gussie May Kaiser
Helen Margaret Hanley
Margaret Elsie Monahan
Alma Berenice Vaillencour

Elementary Course

(December 22, 1909)

Edna Belle Hancock
Hazel Belle Taylor

ROSTER OF STUDENTS

GRADUATE

Coyler, Lydia Elizabeth	Liberal Arts	Reno
Church, Mrs. Florence H.	Liberal Arts	Reno
Mack, Effie Mona	Liberal Arts	Reno
Larcombe, Hazel Pearl	Liberal Arts	Reno
Parker, Dorothy Frances	Liberal Arts	Reno
Scott, Joseph DuSang	Liberal Arts	Battle Mountain

SENIORS

Bennett, Ellsworth Richard	Mines	Nevada City, Cal.
Bray, Florence Leslie	Liberal Arts	Reno
Brown, Charles LeRoy	General Science	Reno
Cafferata, Frederick James	Mechanical Engineering	Reno
Charles, William Mortimer	Agriculture	Reno
Cleator, Cora Mildred	Liberal Arts	San Diego, Cal.
Creel, Cecil Willis	Agriculture	Wadsworth
Foss, Marion Henry	Mines	Waterville, N. H.
Hanser, Hugo E.	Civil Engineering	New York City
Harris, Walter Cameron	Mines	Reno
Hasch, Vera Ellen	Liberal Arts	Reno
Heise, Henry Claude	Mines	Gardnerville
Henderson, Virgil Munroe	Mines	Chico, Cal.
Heuser, Charles Godfrey	Mines	Milwaukee, Wis.
Hobbins, Charles Francis	Mines	Reno
Horn, John Stephen	General Science	Reno
Jepson, Melvin Edward	Mechanical Engineering	Verdi
Layman, Randall Brooks	Mechanical Engineering	Reno
Leavitt, Louis Selwyn	Mechanical Engineering	Yerington
Linton, William Donald, Jr.	Mechanical Engineering	Reno
Mead, Agnes Claire	Liberal Arts	Reno
Myers, Alfred	Mines	Berkeley, Cal.
Pike, Gertrude Beatrice	Liberal Arts	Reno
Spark, Clinton Walter	Mines	Tonopah
Teel, Claude	Mines	Bishop, Cal.
White, Harriett Howell	Liberal Arts	Reno

JUNIORS

Beebe, Cedric Harding	Liberal Arts	Reno
Breeding, Frank Owen	Mines	Eugene, Ore.
Bruce, Daniel Eldred	Mines	Reno
Cameron, Donald Caleb	Mines	North Platte, Neb.
Curler, Augusta	General Science	Reno
Fletcher, Harold Augustus	General Science	Reno

Glass, Rowena Ethel	Liberal Arts	Reno
Hobbins, Helen Ruthven	Liberal Arts	Reno
Holmes, August	Mines	Battle Creek, Mich.
Jepsen, Mathilda	Liberal Arts	Gardnerville
Lenahan, Louise Mabel	Liberal Arts	Reno
Ogden, Chester Muir	Mechanical Engineering	Nevada City, Cal.
Ohmert, Hazel Mary	Liberal Arts	Silver City
Pearson, Edgar Ford	Mechanical Engineering	Reno
Reed, Florence Nightingale	Liberal Arts	Lovelock
Spencer, Raymond	Mechanical Engineering	Pacheco, Cal.
Seaton, Roland Moore	Mines	Santa Rosa, Cal.
Schuler, Isabelle	Liberal Arts	Reno
Thompson, Ethel Ray	Liberal Arts	Reno
Tibbals, Carl Lampe	Civil Engineering	Reno
Winter, Bessie Marguerite	Liberal Arts	Whiterock
Wright, Farnsworth	General Science	Reno

SOPHOMORES

Bray, Mildred Nevada	General Science	Reno
Cagwin, Eunice Adelaide	Liberal Arts	Sparks
BuBois, Luther Edwin	General Science	Carthage, Ind.
Davey, Lillian A.	General Science	Grass Valley, Cal.
Donohue, Millie	Liberal Arts	Bodie, Cal.
Dorn, Norman Lester	Mechanical Engineering	Los Angeles, Cal.
Finney, Lynn Kelso	Mechanical Engineering	Modesto, Cal.
Frisch, Emma Elizabeth	General Science	Reno
Gignoux, Frank C.	Mechanical Engineering	Reno
Gilcrease, Leonard Llewellyn	Mechanical Engineering	Lemoore, Cal.
Helphinstine, Charles W.	Mines	Chico, Cal.
Hauck, Fred Bryant	Civil Engineering	Norwood, Ohio
Hauss, Lena	Liberal Arts	Yuba City, Cal.
Heward, Harlan Lester	Liberal Arts	Reno
Higgins, Helen Brelsford	Liberal Arts	Reno
Hilton, Charles Rhoads	Liberal Arts	Modesto, Cal.
Jones, Bertha Rachel	Liberal Arts	Sweetwater
Langwith, Margaret Angela	Liberal Arts	Golconda
Layman, Harold Leslie	Civil Engineering	Reno
Lewis, Leola	Liberal Arts	Reno
Menardi, John	Mines	Reno
Miramura, M.	General Science	Hiroshima, Japan
Orr, Elda Ann	General Science	Reno
Patrick, Lloyd Brown	Agriculture	Reno
Preston, Mrs. A. W.	Liberal Arts	Reno
Rowe, Albert John	Mines	Berkeley, Cal.
Reynolds, Arthur Icard	Mines	Grass Valley, Cal.
Settlemeyer, Wm. Herman	Civil Engineering	Gardnerville
Smither, Thos. McCourt	Mines	Reno
Smith, Wilhelmina L.	Liberal Arts	Bodie, Cal.
White, Florence E.	Liberal Arts	Reno

Winter, Edith Emelyn	Liberal Arts	Whiterock
Wilson, Nathaniel	Mechanical Engineering	Reno
Wilson, Joseph Willis	Agriculture	Nordyke

FRESHMEN

Alter, Nellie Marie	General Science	Reno
Barber, Neil Kenneth	Mechanical Engineering	Reno
Bradner, Donald Byal	Mines	San Francisco
Brennen, Alice Anna	Liberal Arts	Blaine
Brown, Ethel Elizabeth	General Science	Reno
Cazier, John Ingersoll	Mechanical Engineering	Wells
Coe, Gei	Liberal Arts	Fallon
Cole, Willie Dale	Agriculture	Sparks
Collins, John Gilmore	Mines	Goldfield
DeFlon, Marie Augusta	Liberal Arts	Eureka
Dessar, Delwyn	Mines	New York City
Drummond, Amelia Charlotte	Liberal Arts	Boise, Idaho
Elder, Macon	Agriculture	Auburn, Cal.
Evans, Leslie	Mechanical Engineering	Reno
Farrer, Robert Perry	Liberal Arts	Carson City
Finney, Mabel Consuelo	General Science	Modesto, Cal.
Fletcher, Howard F.	Liberal Arts	Reno
Franzman, Hattie May	Liberal Arts	Reno
Frazer, Gladys Echo	General Science	Sparks
Goldsworthy, James George	Mines	Gold Hill
Hale, Harold Porcher	Liberal Arts	Reno
Hamilton, Claude	Mechanical Engineering	Silver City
Harbaugh, Paul Colin	Liberal Arts	Reno
Harriman, Lester	Agriculture	Northam
Kelly, Isaac Judson	Liberal Arts	Reno
Kelly, Earl Eames	Liberal Arts	Reno
Knemeyer, Edward Franz	Mechanical Engineering	Mason
La Fontaine, Coral	Liberal Arts	Fallon
Linsea, Carrie Edith	Liberal Arts	Stillwater
Lusk, John Clifton	Mechanical Engineering	Reno
Mahan, Grace	Liberal Arts	Reno
Manion, Harold Sharp	Agriculture	Portland, Ore.
McPhail, Harvey Franklin	Mechanical Engineering	Sparks
Milentz, Carl Albert	Agriculture	St. Louis, Mo.
Morrow, Nellie Katherine	General Science	Reno
Noble, Martha	Liberal Arts	Elko
Neasham, Myrtle Venus	Liberal Arts	Sparks
O'Brien, Edwina Jane	Liberal Arts	Sparks
Parsons, Willis Beth	Mines	El Cajon, Cal.
Pennell, William	Mechanical Engineering	Reno
Pickett, Helen	Liberal Arts	Reno
Pruett, Dale B.	Mechanical Engineering	Reno
Reed, Frances Jessamine	Liberal Arts	San Diego, Cal.
Reinken, Emma A.	Liberal Arts	Elko

Richardson, Raymond Robert..Mines Goldfield
Smyth, William Isaac.....Mines Reno
Suyemoto, Tsutomu H.....Mines Reno
Tillson, Warren S.....Mechanical Engineering.....Modesto, Cal.
Van Leer, Alice Ruff.....Liberal Arts.....Elko
Webster, William Clarke.....Mechanical Engineering.....Reno
Wilkin, Jonathan H.....Agriculture.....Los Angeles, Cal.

THE NORMAL SCHOOL

Angel, Gertrude E.....Wells
Bates, Edna Viola.....Verdi
Bacon, Hazel Belle.....Reno
Blevins, Viola Mariea.....Halleck
Brusso, Augusta Harrison..Sparks
Curler, Mollie D.....Reno
Dickinson, Laura....Palo Alto, Cal.
Duncan, Pearl.....Reno
Feily, Margaret.....Virginia City
Jones, Gladys M.....Vallejo, Cal.
McNamara, Norine.....Goldfield
Merialdo, Isabel.....Eureka
Pohl, Gertrude Mabel.....Austin
Porter, May Grace.....Verdi
Rulison, Alpha Irene.....Reno
Schoer, Christina.....Wells
Sullivan, Mary Margaret....Sparks
Webster, Ethel.....Reno

SPECIALS

Adams, Mrs. Maxwell.....Agriculture Reno
Anderson, Walter W.....Mines Reno
Anderson, Morris D.....Civil Engineering.....Palo Alto, Cal.
Armour, Mrs. Bessie.....Liberal Arts Reno
Asher, Robert.....Mines Reno
Barber, Elda Marian.....Liberal Arts Reno
Booth, Bessie E.....Liberal Arts Reno
Bradley, Irene Dita.....Liberal Arts Reno
Bumstead, Mrs. Clara W.....Agriculture Reno
Burgess, Mrs. Elizabeth.....Liberal Arts.....Rochester, N. Y.
Carville, Alyn Robert.....Liberal Arts.....Elko
Ceander, Mrs. Anton P.....Agriculture Reno
Chapman, Lloyd Gardiner.....Mines Wadsworth
Claflin, Charles Leland.....Mines.....Bakersfield, Cal
Coll, John J.....Mines Lovelock
Cashin, D'Arcy, Jr.....Mines.....San Francisco
Codd, Arthur A.....Mines Reno
Cunningham, Francis Jay.....Liberal Arts.....Sparks
Delahide, John Joseph.....Mines Jackson, Cal.
Drynan, Edna.....Liberal Arts Reno
Easton, Mrs. Agnace.....Agriculture Goldfield
Fergusson, Mrs. S. P.....Agriculture Reno
Frisch, Edward Chester.....Mines Reno
Grayson, Harry Watson.....Mines Vallejo, Cal.
Houston, Mrs. M. C.....Liberal Arts Reno
Hubbard, George R.....Mines.....Tustin, Cal.
Kennedy, Mrs. W. M.....Agriculture Reno
Knight, Charles S.....Agriculture Reno

Lang, Mrs. Sara Pearl	Liberal Arts	South Bethelem, Pa.
Lewis, Charles Clyde	Liberal Arts	Wadsworth
Lund, Lauritz P.	Mechanical Engineering	Reno
Lusk, Ward Webster	Mechanical Engineering	Reno
Mackay, Eric Reay	Mines	Reno
McClintock, Frank Fresner	Mines	Sparks
McGinnis, Mrs. George	Agriculture	Reno
McKenzie, Mrs. George	Liberal Arts	Reno
McVicar, Neil William	Agriculture	Smith
Murphy, Mrs. L. O.	Agriculture	Reno
Norton, Louis L.	Agriculture	New Haven, Conn.
Ordahl, Mrs. George	Agriculture	Reno
Perdue, Mrs. M. M.	Agriculture	Reno
Preston, Albert William	Mechanical Engineering	Reno
Richardson, Mrs. Isaac P.	Agriculture	Reno
Robb, Raymond F.	Mechanical Engineering	Tonopah
Stanislawski, Mrs. M.	Liberal Arts	Reno
Sawyer, Gertrude Alma	Liberal Arts	Reno
Schraps, Paul Curtis	Mines	Detroit, Mich.
Sheldon, Mrs. L. J.	Liberal Arts	Reno
Shirley, William B.	Mines	Reno
Snare, Mary Agnes	Liberal Arts	Reno
Turner, Frank L.	Mines	Reno
Tyler, Gilbert Martin	Mines	Palo Alto, Cal.
Wanklin, Mrs. Coelestine	Liberal Arts	Bristol, Va.
Wickenden, Joseph Wallace	Civil Engineering	Reno
Williams, Mrs. E. L.	Agriculture	Reno

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Sophomores	6	
Freshmen	5	
Specials	0	
		16
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Sophomores	5	
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		28
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Seniors	1	
Juniors	1	
Sophomores	3	
Freshmen	0	
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Sophomores	2	
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Total University Schools		**212**
Enrollment of men		**112**
Enrollment of women		**100**

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UNION LABEL

UNIVERSITY OF NEVADA BULLETIN

VOL. VI APRIL 1, 1912 No. 2

UNIVERSITY OF NEVADA REGISTER



TWENTY-FOURTH ANNUAL NUMBER

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA
RENO, NEVADA

ENTERED AS 2D CLASS MATTER AT RENO, NEVADA, AS PROVIDED BY THE ACT OF CONGRESS, JULY 16, 1894



UNIVERSITY OF NEVADA BULLETIN

VOL. VI APRIL 1, 1912 No. 2

REGISTER

OF THE

UNIVERSITY OF NEVADA

For the Year 1911-1912

WITH ANNOUNCEMENTS FOR THE YEAR 1912-1913

TWENTY-FOURTH ANNUAL NUMBER

PUBLISHED QUARTERLY
BY THE
UNIVERSITY OF NEVADA
RENO, NEVADA


UNION
LABEL

OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, April 1, 1912.

To His Excellency, TASKER L. ODDIE, *Governor of the State of Nevada.*

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1911–1912, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: ARTHUR A. CODD,
Chairman.

GEORGE H. TAYLOR, *Secretary.*

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PREFATORY NOTE

THE CATALOGUE. The catalogue number of the University Bulletin is published each year in April. It presents a complete outline of the University organizations, its affiliated organizations, and its scope; it also lists the members of the faculty and student body for the current year and the courses of study to be offered for the coming year. As these announcements are prepared some time in advance, slight changes are sometimes necessary at the beginning of the year.

REGISTRATION. New students are requested where possible to send their high-school or other credentials to the Registrar at least two weeks before the beginning of the first semester in August. Registration takes place during the first three days of the semester, when all students are expected to present themselves. Registration cards are issued from the Registrar's office. Fees and deposits are payable at the Comptroller's office upon presentation of card from the Registrar's office.

BOARD AND ROOM. The University maintains a residence hall for men and one for women. Applications for room should be made early in the summer. Students rooming in the dormitories take their meals at the University Dining Hall.

UNIVERSITY OFFICES. Students will find the offices of the President, Registrar, and Comptroller on the first floor of Morrill Hall.

CALENDAR OF GRADUATES. A bulletin giving the records of graduates and a list of former students with present addresses is in process of preparation and will probably be issued during the coming year. A copy will be sent to each member of the Alumni Association and to such former students as request it.

COMMUNICATIONS. Requests for the annual catalogue and other publications, and inquiries relating to the admission of students, should be addressed to the REGISTRAR. Communications relating to matters directly in charge of the administration, and all correspondence bearing upon the general interest of the University should be addressed to the PRESIDENT, University of Nevada, Reno, Nevada.

CALENDAR FOR 1912

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UNIVERSITY CALENDAR

1912

May 15	Wednesday	University Commencement
May 16–June 12	Thursday–Wednesday	Summer School in Mine Surveying
June 13–July 11	Thursday–Thursday	Summer School in Geology
June 24–Aug. 2	Monday–Friday	Summer School for Teachers

First Semester, 1912–1913

August 12–13	Monday–Tuesday	Examinations for admission
August 12–13	Monday–Tuesday	Reexaminations to remove conditions
August 13–14	Tuesday–Wednesday	Matriculation and registration
August 15	Thursday	Recitations and lectures begin
August 18	Sunday	University convocation at 3 p. m. in the Gymnasium
September 2	Monday	Labor Day
October 31	Thursday	Admission Day
November 28	Thursday	Thanksgiving Day
December 18	Wednesday	First semester ends
December 19	Thursday	Holiday vacation begins

1913

January 5	Sunday	Holiday vacation ends

Second Semester, 1912–1913

January 6–7	Monday–Tuesday	Examinations for admission
January 6–7	Monday–Tuesday	Reexaminations to remove conditions
January 7–8	Tuesday–Wednesday	Matriculation and registration
January 9	Thursday	Recitations and lectures begin
February 12	Wednesday	Lincoln's Birthday
February 22	Saturday	Washington's Birthday
March 21–23	Friday–Sunday	Easter recess
		Inspection of Cadet Battalion
May 3	Saturday	Senior examinations end
May 10	Saturday	Annual meeting of the Honorary Board of Visitors
May 10, 2 p. m.	Saturday	Exhibition of Domestic Science Department
May 10, 8 p. m.	Saturday	Senior farce

[*Calendar continued on next page.*]

COMMENCEMENT WEEK

May 11	Sunday	Baccalaureate sermon
May 11, 2 p.m.	Sunday	Band concert on Quadrangle
May 12	Monday	Thesis Day
May 12, 8 p.m.	Monday	Address before University and Historical Society
May 13	Tuesday	Annual meeting of the Board of Regents
May 13	Tuesday	Class Day
May 13, 4 p.m.	Tuesday	Examinations end
May 13, 8 p.m.	Tuesday	Folk songs and dances by Department of Physical Training for Women and the Department of Expression, on Quadrangle
May 14, 10 a.m.	Wednesday	Review of Cadets on the Quadrangle
May 14, 10:30 a.m.	Wednesday	COMMENCEMENT
May 14, 8 p.m.	Wednesday	Senior ball

UNIVERSITY OF NEVADA

TWENTY-FIFTH ANNIVERSARY—1886–1911

The celebration of the twenty-fifth anniversary of the opening of the University of Nevada in Reno was held Commencement week, May 14th to 17th, and took the form of a home-coming and reunion of graduates and former students.

The commencement address in honor of this occasion was delivered by Judge Frank H. Norcross, a member of the pioneer class; subject: "A Retrospect and a Prospect."

Following the exercises a reunion luncheon was given in the Gymnasium attended by about five hundred alumni, former students, and friends of the University. Toasts were given, college songs sung, incidents of college days related, and old ties and friendships renewed.

In Memoriam

Thomas W. Cowgill

Emeritus Professor of the English Language and Literature

Born April 14, 1854
Died August 10, 1911

OFFICERS OF GOVERNMENT

THE REGENTS OF THE UNIVERSITY

The Hon. Arthur A. Codd (1909–1913) Chairman.....Reno
The Hon. Frank Williams (1909–1913).....Good Springs
The Hon. Charles B. Henderson (1911–1915).....Elko
The Hon. Hosea E. Reid (1911–1915).....Reno
The Hon. James W. O'Brien (1911–1913).....Sparks
Mr. George H. Taylor, Secretary.....Reno

OFFICERS OF ADMINISTRATION

President of the University.....Joseph Edward Stubbs
Vice-President.....Robert Lewers
Comptroller.....Charles H. Gorman

THE HONORARY BOARD OF VISITORS

Hon. James G. Sweeney, Chairman.....Carson City, Ormsby County
Hon. Robert M. Price, Secretary.....Reno, Washoe County
Hon. Geo. Watt.....Austin, Lander County
Hon. H. A. Comins.....Ely, White Pine County
Hon. Geo. F. Talbot.....Carson City, for Elko County
Hon. William J. Douglass.....Tonopah, Nye County
Hon. Maurice Sullivan.....Goldfield, Esmeralda County
Hon. A. R. Merritt.....Fallon, Churchill County
Hon. Edward Reinhart.....Winnemucca, Humboldt County
Hon. Chas. Fulstone.....Jacks Valley (Genoa), Douglas County
Hon. C. H. Duborg.....Beowawe, Eureka County
Hon. John Shier.....Caliente, Lincoln County
Hon. F. H. Norcross.....Carson City, Ormsby County
Hon. Jas. H. Kinkead.....Virginia City, Storey County
Hon. W. E. Lawson.....Mason, Lyon County

OFFICERS OF THE FACULTY

President.....Joseph Edward Stubbs
Vice-President.....Robert Lewers
Superintendent of Buildings.....Richard Brown
Registrar.....Louise M. Sissa
Librarian.....Joseph Dieffenbach Layman
Secretary to the President.....Carolyn M. Beckwith

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

The President of the University is ex officio a member of all Standing Committees.

Student Affairs for Men.....LEWERS, BROWN, PALMER, POWERS, APPLEWHITE
Student Affairs for Women.....Miss BARDENWERPER, Mrs. KAYE, Miss DAY, Miss LEWERS
Athletics.....SCRUGHAM, HASEMAN, APPLEWHITE
Public Exercises.....DOTEN, LAYMAN, VON JANINSKI
Honors and Scholarships.....Miss WIER, HARTMAN, PAINE
Public Health.....MACK, Mrs. KAYE, JOHNSTONE
Delinquent Scholarship.....YOUNG, FRANDSEN, Miss BARDENWERPER
Military Affairs.....APPLEWHITE, JONES, THOMPSON
Admission and Advanced Standing.....M. ADAMS, ORDAHL, Miss DE LAGUNA
Registration.....FRANDSEN, YOUNG, Miss BARDENWERPER
Graduation and Theses.....HILL, KENNEDY, WATSON
Schedules and Examinations.....BOARDMAN, R. ADAMS, THOMPSON
University Publications.....CHURCH, HILL, WATSON
Library.....LAYMAN, CHURCH, KENNEDY
Senior College and Graduate Courses.....R. ADAMS, HARTMAN, Miss WIER
Appointment Committee.....HARTMAN, ORDAHL, Miss DE LAGUNA
Advisory Committee.....WATSON, Miss WIER, FRANDSEN

UNIVERSITY FACULTY

OFFICERS OF INSTRUCTION AND ADMINISTRATION AND OTHER OFFICERS

With the exception of the President, the names of all professors and officers in the first group whose appointments antedate April, 1907, are arranged in order of appointment to rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, assistants, and officers are arranged in their respective groups according to order of appointment to present rank.

JOSEPH EDWARD STUBBS

President of the University

Instructor in Greek and Latin, Ohio Wesleyan University, 1872–75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880–86; President Baldwin University, Ohio, 1886–94; Honorary D.D., German Wallace College, 1890; President Ohio College Association, 1891–92; President of the University of Nevada, 1894–; Professor of Psychology and Ethics, 1894–95; Professor of Political Science and Ethics, 1895–1904; Professor of Elementary and International Law, 1904–11; President Association of American Agricultural Colleges and Experiment Stations, 1899–1900; LL.D., Ohio Wesleyan University, 1905.

University Campus. Phone 122.

ROBERT LEWERS

Vice-President, Professor of Elementary and International Law and Teacher of Commercial Subjects

Teacher, Public Schools, Mill Station, Nevada, 1882–83; Sutro, Nevada, 1884–85; Dayton, Nevada, 1886–89; Registrar, University of Nevada, 1890–1906; Professor of Political Economy and Principal of the Commercial School, 1890–1911; Professor of Elementary and International Law and Teacher of Commercial Subjects, 1911–.

Elks' Hall, 38 West First Street. Phone 431.

RICHARD BROWN

Superintendent of Buildings and Master of Lincoln Hall

Cutter in United States Mint, Carson City, 1889–1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891–1899; Superintendent of Buildings and Grounds, University of Nevada, 1891–1912; Superintendent of University Dining Hall, Univer-

sity of Nevada, 1895–; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–12; Superintendent of Buildings, 1912–.

Lincoln Hall, University Campus. Phone 173.

JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher, District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896– (absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

358 Washington Street. Phone 1563.

LAURA DE LAGUNA

Professor of Romanic Languages and Literatures

Instructor in English, Mills Seminary, California, 1888–89; Instructor in French and English, Oakland Seminary, California, 1890–91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894–95; Student Romance Languages, Rome, Paris, 1895–96; Instructor in Modern Languages, University of Nevada, 1896–99; Assistant Professor of Modern Languages, 1899–1901; Associate Professor of Modern Languages, 1901–1906; Professor of Modern Languages, 1907–1911; Professor of Romanic Languages and Literatures, 1911–.

1029 North Virginia Street.

JEANNE ELIZABETH WIER

Professor of History and Political Science

Teacher, Public Schools, Rockwell, Iowa, 1889–1892; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893–95; Student, Leland Stanford Junior University, 1896; Acting Assistant Professor of History, University of Nevada, 1899–1901; B.A. (History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901–06; Secretary, Nevada Historical Society, 1904–; Professor of History, 1907–.

834 North Center Street. Phone 95.

PETER FRANDSEN

Professor of Biology

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895–96; A.B., Harvard University, 1898; A.M., 1899;

Tutor and Assistant in Zoology, Harvard University, 1898–99; Graduate Student, Harvard University, 1899–1900; Assistant in Zoology, Harvard University and Radcliffe College, 1899–1900; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900–02; Associate Professor Zoology and Bacteriology, 1902–03; Professor of Zoology and Bacteriology, 1903-06; Professor of Biology, 1906–; Absent on leave, travel and study in Europe, 1910.

210 Maple Street. Phone 1163.

PATRICK BEVERIDGE KENNEDY

Professor of Botany, Horticulture and Forestry

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900–; Associate Professor of Botany and Horticulture, University of Nevada, 1900–02; Professor of Botany, Horticulture and Forestry, 1902–.

311 Elm Street.

GEORGE J. YOUNG

Professor of Mining and Metallurgy

B.S., College of Mining, University of California, 1899; Analytical Assistant, Mining Department, University of California, 1899–1900; Student of Economic Deposits, and Mining and Metallurgical Practice in the Feld during summer months, 1900, Bodie District, California; 1901, in Utah, Colorado, California; 1902, in Utah and Montana; 1903–04, in Nevada and California; Assistant Professor of Metallurgy, University of Nevada, 1900–02; in charge of Nevada State Mining Laboratory, 1900–; Member of American Institute of Mining Engineers, 1900–; Professor of Mining and Metallurgy, University of Nevada, 1902–.

820 North Center Street.

SAMUEL BRADFORD DOTEN

Professor of Entomology

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898–1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900–05; Instructor in Mathematics and Entomology, 1900–02; Assistant Professor of Mathematics and Entomology, 1902–03; Assistant Professor of Entomology, Meteorology and Mathematics, 1903–05; Principal of the University High School and Teacher of Mathematics, Consulting Entomologist, and

Meteorologist, Nevada Agricultural Experiment Station, 1905–06; Entomologist, Experiment Station, and Professor of Entomology, 1906–.

323 West Street. Phone 62.

ROMANZO ADAMS

Professor of Economics and Sociology

Teacher, Public School, Bloomingdale, Wisconsin, 1886–87; Marshalltown, Iowa, 1887–88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892–94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology and Principal of the Normal Department, Western College, Iowa, 1898–1900; Graduate Student, University of Chicago, 1900–02; Fellow in Sociology, University of Chicago, 1901–02; Ph.D., (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905–10; Director N. E. A., 1908–10; Professor of Education and Sociology, University of Nevada, 1902–11; Acting Professor of Economics, 1911–12; Professor of Economics and Sociology, 1912–.

735 West Street. Phone 1498.

GORDON HAINES TRUE

Professor of Agriculture and Animal Husbandry

B.S., University of Wisconsin, 1894; Instructor in Dairy Husbandry, Michigan Agricultural College, 1894–99; Professor of Animal Husbandry, University of Arizona, 1899–1903; Chairman Executive Committee, Arizona Agricultural Association, 1901–03; Professor of Agriculture and Animal Husbandry, University of Nevada, 1903–; Director Nevada Agricultural Experiment Station, April, 1912–.

755 Evans Avenue. Phone 1113.

JAMES GRAVES SCRUGHAM

Professor of Mechanical and Electrical Engineering

B.M.E., Kentucky State College, 1900; with Creaghead Engineering Company, Cincinnati, Ohio, 1900; Instructor in Physics and Drawing, High School, Fort Smith, Arkansas, 1901; Graduate Student, University of Michigan, summer, 1901; Director of Manual Training, High School, Highland Park, Chicago, 1901–03; with Metropolitan Elevated Railway, Chicago, 1902; Instructor in Mechanical Engineering, Kentucky State College, Summer School, 1903; Assistant Professor of Mechanical Engineering, University of Nevada, 1903–05; Member of International Electrical Congress, 1904; with Abner Doble Company, San Francisco, summer, 1905–06; Associate Professor of Mechanical Engineering, University of Nevada, 1905–06; M.E., Kentucky State University, 1906; Instructor in Mechanical Engineering, Summer School, University of Wisconsin, 1907; Engineer of Tests, Oregon Short Line Railroad, sum-

mers, 1908–11; Professor of Mechanical Engineering, University of Nevada, 1906–1912; Professor of Mechanical and Electrical Engineering, 1912–. Nevada and Eighth Streets. Phone 1740.

WILLIAM SIDNEY TANGIER SMITH [1]

Professor of Geology and Mineralogy

B.L., University of California, 1890; Graduate Student, Johns Hopkins University, 1890–91; Ph.D., University of California, 1896; Professor of Mathematics and Natural Science, Occidental College, Los Angeles, 1894–95; Fellow in Mineralogy, University of California, 1895–97; Professor of Mathematics, State Normal School, Chico, California, 1897–98; Assistant in Chemistry, University of California, 1898; Assistant in Mineralogy, University of California, 1899–1900; Assistant Geologist, U. S. Geological Survey, 1900–07; Associate Professor of Geology and Mineralogy, University of Nevada, 1906–07; Professor of Geology and Mineralogy, University of Nevada, 1907–; Fellow, Geological Society of America; Fellow, American Association for the Advancement of Science.

MAXWELL ADAMS

Professor of Chemistry

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890–91; A.B. (Chemistry), Stanford University, 1895, A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in Chemistry, Leland Stanford Junior University, 1895–97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of Chemistry and Physics, State Normal School, Chico, California, 1897–1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900–01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900–06; Consulting Chemist Diamond Match Company, 1901–06; Fellow, American Association for the Advancement of Science; Professor of Chemistry, University of Nevada, 1906–.

29 West Ninth Street. Phone 1502.

WINFRED BERDELL MACK

Professor of Bacteriology and Veterinary Science

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904–1905; Assistant in Pathology and Bacteriology, Cornell University, 1905–06; Veterinarian and Bacteriologist, Nevada Agricultural Experiment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1907–; Director of State Hygienic Laboratory, 1909–.

829 Lake Street. Phone 498.

[1] Absent on leave, 1912-1913.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–03; Graduate Student and Reader, University of Chicago, June, 1903–June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904–September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905–September, 1905; Fellow in English, University of Chicago, June, 1906–September, 1907; Ph.D., University of Chicago, 1911; Professor of the English Language and Literature, University of Nevada, 1907–.

125 East Seventh Street. Phone 858.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

255 University Terrace. Phone 886.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888–August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891–January, 1892; Instrumentman, Memphis Artesian Water Company, January–September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; C.E., University of Wisconsin, 1911; with Engineering Department Sanitary District of Chicago, on Topographic Surveys and in charge of Cement Testing Laboratory, June, 1894–December, 1896; miscellaneous engineering work, Chicago, January–August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897–August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901–March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January–August, 1905; Superintendent, Fitzsimmons and Connell Company (bridge substructure), August–December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer in charge branch canal projects, Sanitary District of Chicago, January–August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.

737 Evans Avenue. Phone 1803.

LOWE ABEEL McCLURE [1]

Professor of Military Science and Tactics; Instructor in Physical Education for Men

Graduate, United States Military Academy, 1904; commissioned Second Lieutenant of Infantry, June 15, 1904; served with the 15th Infantry for two years in the Island of Mindanao, P. I., and three years with the same regiment in the United States; Professor of Military Science and Tactics, University of Nevada, 1909–June, 1912.

LEON WILSON HARTMAN

Professor of Physics

B.S., Cornell University, 1898; A.M., 1899; Graduate Scholar in Physics, 1899; Assistant in Physics, 1900–01; Professor of Physics, Kansas Agricultural College, 1901–02; Frazer Fellow in Physics, University of Pennsylvania, 1902–03; Ph.D., 1903; Tyndale Fellow in Physics of the University of Pennsylvania, Goettingen, 1903–04; Instructor in Physics, Cornell University, 1904–05; Assistant Professor of Physics, University of Utah, 1905–06; Associate Professor of Physics, 1906–09; Professor of Physics, 1909; Fellow A.A.A.S., Am. Phys. Soc., Utah Academy of Science; Professor of Physics, University of Nevada, 1909–. 215 Maple Street. Phone 851.

CARL ALFRED JACOBSON [2]

Professor of Agricultural Chemistry

Teacher, Public Schools of Wisconsin, 1894–96; Carleton Academy, 1896–98; B.S., Carleton College, Northfield, Minnesota, 1903; Graduate Student, Johns Hopkins University, Baltimore, Maryland, 1903–04; Europe, 1901–02; Instructor in Chemistry, York City High School, York, Pennsylvania, 1904–07; M.S. (*in absentia*), Carleton College, 1907; Ph.D., Johns Hopkins University, 1908 (Chemistry, Physical Chemistry and Physics); Fellow and Research Chemist, Rockefeller Institute for Medical Research, New York, 1908–09; Professor of Agricultural Chemistry, University of Nevada, and Chief Chemist, Nevada Agricultural Experiment Station, 1909–.

CHARLES HASEMAN

Professor of Mathematics and Mechanics

A.B., Mathematics, Indiana University, 1903; Instructor in Mathematics and Physics, High School, Elwood, Indiana, 1903–05; A.M., Indiana University, 1906; Assistant in Mathematics, Indiana University, 1905–06; Ph.D., Mathematics, University of Goettingen, 1907; Instructor in Mathematics, Indiana University, 1907–08; Assistant Professor of Mathematics, Indiana University, 1908–09; Associate Professor of

[1] Detail expires May 31, 1912. [2] Absent on leave, 1911–1913.

Mathematics, University of Nevada, 1909–10; Professor of Mathematics and Mechanics, University of Nevada, 1910–.

752 North Center Street. Phone 359.

JOHN CALVIN WATSON

Professor of the Greek Language and Literature

A.B., Eureka College, 1892; A.B., Harvard University, 1894; Teacher of Latin and Greek, High School, Menominee, Michigan, 1894–96; Principal, 1895–96; Teacher of Latin, Lake View High School, Chicago, 1896–99; Graduate Student in Classical Philology, Harvard University, 1899–1902; A.M., 1900, and Ph.D., 1902, Harvard University; Assistant in Classics, Radcliffe College, 1900–01; Instructor in Latin, Cornell University, 1902–07; Reader in Latin at Entrance Examinations for Harvard University and Radcliffe College, and for the College Entrance Examination Board, 1903–06; Assistant Professor of Greek, University of Nevada, 1910–11; Professor of the Greek Language and Literature, 1911–.

749 Lake Street. Phone 621.

GEORGE ORDAHL

Professor of Education and Psychology

Principal, Public Schools, Merrillville, Indiana, 1900–01; Corvallis, Montana, 1901–03; A.B., University of Oregon, 1905; A.M., 1906; Fellow, Clark University, Worcester, Massachusetts, 1906–08; Ph.D., Clark University, 1908; Professor of Psychology and Education, Geneva College, Beaver Falls, Pennsylvania, 1908; Assistant Professor of Psychology and Education, University of Nevada, 1909–11; Professor of Education and Psychology, 1911–.

115 West Tenth Street. Phone 1391.

STERLING PRICE FERGUSSON

Professor of Meteorology and Climatology

Assistant to H. H. Clayton at Blue Hills Observatory, 1887–1890; Assistant in Charge of Instruments, Blue Hills Observatory, 1890–1909; Meteorologist, 1909–10; Associate Observer in Meteorology and Climatology, Nevada Experiment Station, 1910–; Professor of Meteorology and Climatology, University of Nevada, 1911–.

41 West Ninth Street. Phone 1396.

HUGH LAFAYETTE APPLEWHITE

Professor of Military Science and Tactics

Graduate, United States Military Academy, 1897; appointed Second Lieutenant of Infantry, 1897; transferred to 6th Artillery and assigned to Siege Battery E, 1898; Mustering-out Officer 1st D. C. Volunteer Infantry, Washington, D. C., 1898; promoted to First Lieutenant,

1899; promoted to Captain, 1901, and was assigned to and organized the 103d Company Coast Artillery at Fort Howard, Maryland; graduated from School of Submarine Defense, Fort Totten, New York, 1905; on duty, Jackson Barracks, New Orleans, 1906; on general recruiting duty, 1906–1908; retired, 1908; detailed Professor of Military Science and Tactics, Peacock Military College, San Antonio, Texas, 1908–10; on duty reorganizing militia of Utah, 1910–12; Professor of Military Science and Tactics, University of Nevada, June 1, 1912–.

OSCAR P. JOHNSTONE

Associate Professor of Physiology and Hygiene

Ph.B., College of Grinnell, Iowa, 1897; M.S., University of Iowa, 1902; M.D., Rush Medical College, 1905; Fellow in Chemistry, University of Iowa, 1900–01; Assistant in Physiology, Cornell University, 1901–03; Assistant in Physiology, Cornell University, Summer School, 1903; Assistant in Pathology, Rush Medical College, 1903–04; Fellow in Pathology, Rush Medical College, 1904–06; Professor of Pathology, University of Colorado, 1905–07; Substitute in Pathology, Rush Medical College, for Professor Ricketts, summer of 1907; for Professor LeCount, spring of 1908; Pathologist, Mercy Hospital, Pittsburg, Pennsylvania, 1908–09; Associate Professor of Physiology and Hygiene, University of Nevada, 1909–; Assistant State Hygienic Laboratory, 1909–.

636 North Center Street. Phone 1313.

REUBEN CYRIL THOMPSON

Associate Professor of the Latin and Greek Languages and Literatures

B.A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., Harvard, 1902; Instructor in Latin and History, High School, Boise City, Idaho, 1902–05; Professor of Latin, State Normal School, Albion, Idaho, 1905–08; Instructor in History and Civics, Idaho State Summer Normals, 1907–08; Instructor in Latin and Greek, University of Nevada, 1908–09; Assistant Professor of Latin and Greek and Associate Principal of the University High School, 1909–10; Associate Professor of Latin and Greek and Principal of the University High School, 1910–12; Associate Professor of Latin and Greek, University of Nevada, 1912–. 821 North Center Street. Phone 463.

KATE BARDENWERPER

Assistant Professor of Domestic Science

Graduate, State Normal School, San José, California, 1880; Teacher, Public Schools, Carson City, Nevada, 1880–86; First Assistant, High School, Carson City, 1886–94; Critic Teacher Training School, University of Nevada, 1894–99; Student Leland Stanford Junior University, 1898–99; Student University of California, 1900–01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S.

(Domestic Science), 1901; Instructor in Domestic Science, University of Nevada, 1904–05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Domestic Science, University of Nevada, 1905–. 1029 North Virginia Street.

SANFORD CROSBY DINSMORE

Assistant Professor of Agricultural Chemistry

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903–05; Chemist, Nevada Agricultural Experiment Station, 1905–09; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906–; In Charge Food and Drugs Control, 1910–; Deputy Sealer, Department of Weights and Measures, 1912–. 223 University Terrace. Phone 1744.

KATHERINE LEWERS

Assistant Professor of Freehand Drawing

Student, St. George's Art School, Glasgow, 1893–94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894–97; Student with Howard Helmick, Washington, D. C., 1897–99; received prize scholarship New York School of Design, 1900; studied at New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905–; Photographer, Nevada Experiment Station, 1905–; Assistant Professor of Freehand Drawing, 1907–.

J CLAUDE JONES

Assistant Professor of Geology and Mineralogy; Curator of the Museum

A.B., University of Illinois, 1902; Instructor in Physics and Manual Training, Champaign High School, 1902–03; Instructor in Manual Training, Whiting High School, 1903–04; Assistant in Geology, University of Illinois, 1904–05; Instructor in Geology, University of Illinois, 1905–06; Graduate Student, University of Chicago, 1906–09; Research Assistant in Geology, University of Chicago, 1907–09; Instructor in Physiography, University of Kansas, summer term, 1907; Instructor in Physiography, University of Chicago, summer term, 1908; Member of the State Geological Survey of Illinois, 1906–09; Instructor in Geology and Mineralogy, University of Nevada, 1909–10; Curator of the Museum, University of Nevada, 1909–; Assistant Professor of Geology and Mineralogy, University of Nevada, 1910–.

736 West Street. Phone 823.

CHARLES S. KNIGHT [1]

Assistant Professor of Agronomy

B.S., Agriculture, University of Wisconsin, 1907; Assistant in Feed and Fertilizer Inspection, University of Wisconsin, July, 1907–January,

[1] Resigned, January 1, 1912.

1908; Assistant in Agronomy, Kansas State Agricultural College, January, 1908–09; Instructor in Agronomy, University of Nevada, 1909–10; Assistant Professor of Agronomy, University of Nevada, 1910–12.

AMOS ARTHUR HELLER

Assistant Professor of Botany, Horticulture and Forestry

A.B., Franklin and Marshall College, 1892; A.M., 1897; Sc.D., 1911; Field Agent, U. S. Department of Agriculture, 1892; Botanical explorations in Virginia, North Carolina, Texas, Hawaiian Islands, Idaho, 1893–96; Instructor in Botany, University of Minnesota, 1896–98; Chief of Vanderbilt Expedition of New York Botanical Garden to Porto Rico, 1898–99; in publishing business, Lancaster, Pennsylvania, 1900–01; Botanical explorations in California, 1902–07; Author of Catalogue of North American Plants, 3 editions; Editor of Muehlenbergia, 1900–; Author of 135 botanical papers; Member of the Torrey Botanical Club of New York City, and of the Linnæen Society of Lancaster, Pennsylvania; Assistant Botanist, Horticulturist and Forester, Nevada Agricultural Experiment Station, 1908–10; Assistant Professor of Botany, Horticulture and Forestry, University of Nevada, 1910–.

539 West Fifth Street.

CHARLES HENRY GORMAN

Comptroller

Registrar, University of Nevada, 1911–12; Comptroller, 1912–.

621 West Sixth Street. Phone 289.

ALICE EUNICE ARMSTRONG

Assistant Librarian

Assistant Librarian, Fresno Free Public Library, June, 1896; Librarian, October, 1896–June, 1905; Acting Librarian, University of Nevada, 1905–07; Assistant Librarian, 1907–12.

36 West Ninth Street. Phone 942.

LOUISE MARY SISSA

Registrar

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884–1892; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893–1901; House Mother, Rowland Hall, Salt Lake City, 1901–05; House Mother, Miss Head's School, Berkeley, California, 1905–06; Assistant Registrar, University of Nevada, 1906–12; Registrar, 1912–.

1033 Ralston Street. Phone 1417.

GUSTAVUS SWIFT PAINE

Instructor in English

Ph.B., University of Chicago, 1908; Ph.M., University of Chicago, June, 1909; Instructor in English, University of Nevada, 1909–.

737 North Center Street. Phone 780.

HELEN ANN MEIGHAN

Instructor in Physical Education for Women

Graduate of High School, Mankato, Minnesota, 1893; Special Student, State Normal School, Mankato, Minnesota, 1894–97; Teacher in Public Schools with special work in Calisthenics, Duluth, Minnesota, 1898–1903; Principal of School and special work in Calisthenics, Missoula, Montana, 1903–05; Special work in Physical Training under Max Aletzhaeuser of Leipzig, Germany; Private pupil of Miss Anna Buttner, of Dr. Sargent's School, Harvard University; specialized in Physical Training, University of Minnesota; Special Teacher in Physical Training, Public Schools, Goldfield, Nevada, 1907–09; Director of Physical Training for Women, University of Nevada, 1909–; Student Summer School Columbia University, 1910.

Manzanita Hall, University Campus. Phone 172.

GEORGE DELAFIELD POWERS

Instructor in Mechanical Engineering

B.S., University of Nevada, 1907; Testing Engineer, General Electric Company, 1907–08; Electrical Foreman, Southern Pacific Company, 1908–10; Instructor in Mechanical Engineering, University of Nevada, 1910–.

310 Thoma Street.

WALTER S. PALMER

Instructor in Mining and Metallurgy

B.S., Mining Engineering, University of Nevada, 1905; with the Greene Consolidated Copper Company, Cananea, Mexico, 1905; Mining and Metallurgical practice in the field, summer months, 1906—Virginia City, Nevada, and Wilkes-Barre, Pa.; E.M., School of Mines, Columbia University, New York, 1907; Mine Surveyor, United States Smelting, Refining and Mining Company, Mammoth, California, 1907–08; Assistant Chemist, Balaklala Consolidated Copper Company, Coram, California, 1908–09; Mining Engineer, United States General Land Office, 1909–10; Instructor in Mining and Metallurgy, University of Nevada, 1910–; Chemist and Assayer, State Mining Laboratory, 1910–.

204 Mill Street. Phone 475.

ALBERT WILLIAM PRESTON

Instructor in Mechanical Engineering

Machinist, C. R. I. & P. R. R., 1897–1901; Toolmaker, McNeil Machinery Company, 1901; Assistant Machine Foreman, Chicago Great Western Ry., 1902–05; Machinist and Assistant Foreman, Southern Pacific Ry., 1905–1910; Student in Engineering, University of Nevada Extension School, 1905–09; Instructor in Mechanical Engineering, University of Nevada, 1910–.

41 West Ninth Street. Phone 1396.

FRANK LEROY PETERSON

Instructor in Irrigation

B.S., Mechanical Engineering, University of Nevada, 1907; Field Assistant in Irrigation Investigations in cooperative work between U. S. Department of Agriculture and State of Nevada, 1908–11; Agent in charge Irrigation Investigations, U. S. Department of Agriculture, 1911–; Irrigation Engineer U. S. Department of Agriculture, 1912; Assistant in Irrigation, Nevada Agricultural Experiment Station, 1911–12; Irrigation Engineer Nevada Agricultural Experiment Station, 1912–; Instructor in Irrigation, University of Nevada, 1911–.

Experiment Station Farm, East Ninth Street. Phone 492.

EDWARD R. VON JANINSKI

Instructor in German

B.A., New York University, 1909; studied at the University of Paris, 1909–1910; Instructor in English, Ecole Pierre, Paris; studied at the Universities of Grenoble and Munich, 1910–11; Instructor in German, and head of the department, University of Nevada, 1911–.

29 West Ninth Street. Phone 1502.

GRACE ALICE DAY

Supervisor of Training, College of Education

Advanced graduate, State Normal School, Winona, Minnesota, 1899; Teacher, Public Schools, Red Wing, Minnesota, 1899; Minneapolis, Minnesota, 1899–1909; summer student, University of Minnesota, 1900; Instructor, Minnesota State Teachers' Training Schools, 1903, 1904, 1905, 1907, 1909, 1910, 1911; Lecturer, Teachers' Institutes, 1910; Student, Teachers' College, Columbia University, 1909–11; B.S., Columbia University, 1911; B.Di., in Education (Supervision) Teachers' College, Columbia University, 1911; Supervisor of Training, College of Education, University of Nevada, 1911–. (Office in Orvis Ring School Building.) Manzanita Hall. Phone 172.

MABEL AGNES JONES

Instructor in Vocal Music

Student Chicago (Illinois) Public Schools; Milton College, Milton, Wisconsin; student, vocal instruction, Frank C. Baird, Chicago, Illinois, 1906–11; student, vocal instruction, William Shakespeare, London, 1911; Teacher, graded schools, 1898–99; 1901–04; Member, Apollo Musical Club, Chicago, Illinois; Instructor Vocal Music, University of Nevada, October, 1911–.

736 West Street. Phone 823.

CHARLES LEROY BROWN

Assistant in Biology

Teacher in Public Schools, 1894–1905; Student at Pacific College, 1894–95; Student at Christian College, 1897–98; Student at University of Nevada, 1905–08; Assistant in Biology, University of Nevada, 1906–1908; Student, University of California, 1908–09; Student, University of Nevada, 1909–; Assistant in Biology, University of Nevada, 1910–.

Whitaker Hall, Ralston Street.

MILES BRYCE KENNEDY

Assistant in Chemistry

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1907–08; Assistant in Chemistry, 1908–.

237 University Terrace. Phone 1719.

WALTER WILLIAMS ANDERSON

Assistant in Chemistry

Teacher, Public Schools of Wisconsin, 1897–98; Practical mining work, 1899–1900; Mine Superintendent, Granite Creek Smelting and Refining Co., Nevada, 1901 and 1902; Purchasing Agent, U. S. Reclamation Service (Truckee-Carson Project), 1903–1906; Student, University of Nevada, 1906–; Student Assistant, Physics, 1908–09; Assistant in Chemistry, University of Nevada, 1910–.

University Heights.

AUGUST HOLMES

Student Assistant in Mathematics

Student Assistant in Mathematics, 1910–12.

Lincoln Hall, University Campus. Phone 173.

CARL LAMPE TIBBALS

Student Assistant in Civil Engineering

Student Assistant in Civil Engineering, 1911–12.

MORRIS D. ANDERSON

Student Assistant in Civil Engineering

Student Assistant in Civil Engineering, 1912–.

CAROLYN M. BECKWITH

Secretary to the President

Assistant Office Secretary, 1902–03; Secretary to the President, 1904–.
638 Washington Street. Phone 1387.

MRS. A. E. KAYE

Mistress of Manzanita Hall

Mistress of Manzanita Hall, 1904–.
University Campus. Phone 172.

MRS. M. E. PORTER

Matron of University Hospital

Matron of University Hospital, 1907–.
University Campus. Phone 121.

JOSEPH B. LYNCH

Superintendent of Grounds, 1911–.

AFFILIATED ORGANIZATIONS

THE STATE MINING LABORATORY

STAFF

JOSEPH EDWARD STUBBS.....President
GEORGE J. YOUNG.....In Charge
W. S. TANGIER SMITH [1].....Geologist and Mineralogist
J CLAUDE JONES.....Mineralogist
WALTER S. PALMER.....Chemist and Assayer
CAROLYN M. BECKWITH.....Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have them analyzed and assayed without cost. (Secs. 4660–4663, incl., Revised Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that these must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be given to the sender, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which it came and all other matters that may be beneficial touching the same."

In compliance with the above section, reports have been rendered and a record book kept. In order to make reports as accurate as possible, it is suggested that the citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning value.

[1] Absent on leave, 1912–1913.

Cooperative Laboratory for the Examination of Potash-Bearing Materials

As an adjunct to the investigation of the fertilizer resources, and especially to the search for potash in the United States now being conducted by Government agencies, there has been established at the Mackay School of Mines, Reno, Nevada, a laboratory for the examination of natural material suspected of containing potash. The laboratory has been organized under a cooperative agreement between the Mackay School of Mines, the Bureau of Soils of the United States Department of Agriculture, and the United States Geological Survey. The laboratory is in charge of Professor George J. Young, of the Mackay School of Mines, with Mr. A. R. Merz, of the Bureau of Soils, as chemist. Facilities have been provided for the examination and assay of potash-bearing materials, and of saline waters and minerals. It will be possible, also, to examine a limited number of samples for contained nitrates.

Samples of suspected potash or nitrate-bearing materials will be examined free of charge for prospectors and others, so far as limitations of time and equipment of the laboratory will permit, but all samples must be accompanied by the following information:

1. The name and postoffice address of the owner, locator, or discoverer of the deposit.
2. The exact location from which the sample was obtained.
3. A description of the material and its surroundings, and of the manner of taking the sample.

This information, or any part of it, will be kept confidential if so requested. However, it should be noted that the laboratory does not agree to make complete analyses or to make quantitative assays, except as rendered desirable by the result of qualitative tests. In all cases, however, it is the intention to make such assays and examinations as will determine the potash or nitrate value alone of the material represented by the sample.

All samples should be addressed to: Cooperative Laboratory, Mackay School of Mines, Reno, Nevada. Dry samples should be at least one-half pound in weight, should be securely wrapped and tied, and marked with the name and address of the sender. Samples of brines or water should be placed in clean bottles of at least one quart capacity, stoppered with clean corks securely tied in, and should be well packed against breakage. Transportation charges must always be prepaid.

THE STATE HYGIENIC LABORATORY

STAFF

JOSEPH EDWARD STUBBS.....President
WINFRED BEBDELL MACK.....Director
OSCAR P. JOHNSTONE.....Pathologist and Bacteriologist

The State Hygienic Laboratory was organized during 1909, under the provisions of an Act of the Legislature approved March 25, 1909. The object of the laboratory is to provide facilities for the diagnosis of the infectious diseases and for research into the nature, cause, and methods for the control of such diseases. The services of the laboratory staff are available to the physicians, health officers and health boards of the State for the diagnosis of certain communicable diseases. Advice and assistance will, on request, be rendered the sanitary officials in the control of outbreaks of infection and in securing sanitary supplies of milk and water.

The results of the work of the laboratory are made public from time to time through bulletins, circulars, and annual reports, and will be sent free on request to residents of the State who desire them.

LABORATORY FOR PURE FOOD AND DRUGS

STAFF

JOSEPH EDWARD STUBBS.....President
GORDON HAINES TRUE.....Director
SANFORD CROSBY DINSMORE.....Chemist in Charge
MILES BRYCE KENNEDY.....Assistant
SILAS EARL ROSS.....Assistant

An Act providing for the inspection and analysis of foods, drugs and liquors, manufactured or offered for sale within this State, was passed by the 1909 session of the Legislature, and became effective January 1, 1910. The State law is modeled after the National Food and Drugs Act of June 30, 1906, and provides that all rules, regulations, definitions, and decisions proclaimed by the Secretary of Agriculture for the enforcement of the National law shall be adopted by this department in the enforcement of the State law.

With such provision Nevada receives valuable aid through the Federal regulations, and avoids conflict with neighboring States having laws also modeled closely after the National Act. Uniformity in State and National laws, and cooperation among officials, is much to be desired, and more can be accomplished under such conditions than by working under laws that are

dissimilar or antagonistic to established regulations that have been in vogue in States maintaining food laws for a number of years.

The laws of this State being similar to the National law, obviates the necessity of manufacturers providing special labels to meet any special requirements that otherwise might exist in this State. Often labels are submitted to this department for approval or correction so that they will comply with the Nevada food law.

LABORATORY FOR WEIGHTS AND MEASURES

STAFF

JOSEPH EDWARD STUBBS.....President
GORDON HAINES TRUE.....Ex Officio Sealer
SANFORD CROSBY DINSMORE.....Deputy Sealer
ELLSWORTH RICHARD BENNETT [1].....Deputy Sealer
SILAS EARL ROSS.....Deputy Sealer

The Nevada State Legislature passed an Act for fixing the standard weights and measures and regulating the sale of commodities or articles of merchandise according to such standards; this Act went into effect January 1, 1912. The enforcement of this law was put in the hands of the Director of the Experiment Station, as sealer of weights and measures, and his deputies.

The standard weights and measures as have been adopted by the Government of the United States have been adopted as the legal standard of weights and measures throughout the State of Nevada. With this adoption Nevada receives aid through the Federal regulations and creates uniformity of State and National standards.

[1] Resigned, March, 1912.

THE AGRICULTURAL EXPERIMENT STATION

THE BOARD OF CONTROL

The HON. ARTHUR A. CODD (1909–1913) Chairman.....Reno
The HON. FRANK WILLIAMS (1909–1913).....Good Springs
The HON. CHARLES B. HENDERSON (1911–1915).....Elko
The HON. HOSEA E. REID (1911–1915).....Reno
The HON. JAMES W. O'BRIEN (1911–1913).....Sparks
Mr. GEORGE H. TAYLOR, Secretary.....Reno

STAFF

JOSEPH EDWARD STUBBS.....President
GORDON HAINES TRUE, B.S.....Director, and in Charge of Agriculture, Animal Husbandry, and Dairying
PATRICK BEVERIDGE KENNEDY, Ph.D.....In Charge of Botany, Horticulture and Forestry
AMOS ARTHUR HELLER, A.M.....Assistant in Botany, Horticulture and Forestry
FRANK LEROY PETERSON, B.S.....Irrigation Engineer
CHARLES S. KNIGHT, B.S.[1].....Agronomist
SAMUEL BRADFORD DOTEN, B.A.....Entomologist
WINFRED BERDELL MACK, D.V.M.....Bacteriologist and Veterinarian
JAMES EDWARD CHURCH, JR., Ph.D.....Meteorologist
STERLING PRICE FERGUSSON.....Associate Meteorologist
CARL ALFRED JACOBSON, Ph.D.[2].....Chemist
SANFORD CROSBY DINSMORE, B.S.....In Charge of Food and Drug Inspection and Department of Weights and Measures
MILES BRYCE KENNEDY, B.S.....Assistant in Food and Drug Inspection
SILAS EARL ROSS, B.S.....Deputy Sealer of Weights and Measures
ELLSWORTH RICHARD BENNETT, B.S.[3].....Deputy Sealer of Weights and Measures
THEODORE W. CLARK.....Superintendent of Farm
Mrs. LILLIE SCHUYLER COWGILL, M.A.....Librarian
LOUISE BLANEY TWADDLE, B.A.....Secretary to the Director

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated $15,000 annually for the support of an Agricultural Experiment Station in each State and Territory of the Union.

[1]Resigned, January, 1912. [2]On leave of absence, 1911-13. [3]Resigned, March, 1912.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; the economic relation of entomology to agriculture; the relation of climate to agriculture and horticulture; the conservation of snow; the forecasting of frost; the determination of relatively frost-free areas for fruit growing; in fact the solving of all problems pertaining to agriculture which are or may be of importance to the State.

The results of the work of the Station are made public through bulletins and reports, which are sent free to all residents of the State who desire them.

ASSOCIATION OF UNIVERSITY ALUMNI

The Alumni Association was organized June, 1894. Its object is to promote union and good fellowship among the Alumni and to advance and protect the interests of the University of Nevada. The dues of the Association are $1 a year for ten years or a life membership for $10. The annual meeting is held during Commencement week at the University.

OFFICERS, 1911–12

President.....DAVID W. HAYS, '00
Vice-President.....ELIZABETH STUBBS TRUE, '99
Secretary-Treasurer.....LOUISE BLANEY TWADDLE, '95

EXECUTIVE COMMITTEE

THE OFFICERS — IDA HOLMES HAYS, '00
CLYDE STUART MCKENZIE, '10

ASSOCIATION OF NORMAL ALUMNI

President.....Mrs. MARY SNOW THURTELL, '90
Vice-President.....IRENE V. BROWN, '09
Secretary-Treasurer.....Mrs. HATTIE RHODES PIERSON, '90

UNIVERSITY ADDRESSES

COMMENCEMENT, 1911

May 14, 1911—Annual Baccalaureate Sermon, President Joseph Edward Stubbs. Text: From Matthew vi, 26. "Is not the life more than meat and the body than raiment?"

May 17, 1911—Twenty-fifth Anniversary Address, "A Retrospect and a Prospect," Justice of the Supreme Court Frank H. Norcross.

May 17, 1911—Scholarship Address, Honorable Hosea E. Reid, Regent.

May 17, 1911—Address, Governor Tasker L. Oddie.

GENERAL ASSEMBLY

FIRST SEMESTER, 1911-1912

August 18, 1911—Address of welcome to the students, Mr. J. D. Layman, Librarian of the University; Address of welcome to the students on behalf of the Faculty, Professor Jeanne E. Wier.

August 25, 1911—"Don't be a Bookworm; be a Scholar," Mr. B. D. Billinghurst, City Superintendent of the Reno Schools.

September 1, 1911—"Thomas W. Cowgill: An Appreciation," Dr. J. E. Church, Jr.; "My Personal Acquaintance with Professor Cowgill," Professor Robert Lewers; "Professor Cowgill: As a Teacher," Professor Samuel B. Doten.

September 8, 1911—"Play and Playgrounds," Mrs. Geo. Ordahl; "The Value of Physical Training," Miss Helen Meighan; "The Great Advantage of Special Training for Young Men and Women Planning to Become Teachers," Miss Grace A. Day.

September 15, 1911—"Life of the Soldier in the Philippines," Judge C. H. Burritt; "Life on Board a Man of War," District Attorney W. Woodburn; "My Recollections of Service in the Spanish War as a Volunteer," Col. C. R. Reeves.

October 12, 1911—"Nature and Causes of the Infectious Diseases," Professor Peter Frandsen.

October 20, 1911—"Prevention of the Infectious Diseases," Dr. W. B. Mack; "Mining," Dr. W. R. Ingalls, editor of the Mining and Engineering Journal, New York City.

November 3, 1911—"The Threefold Value of Life," Dr. John F. Carson, Moderator of the General Assembly of the Presbyterian Church, Pastor of the Central Presbyterian Church of Brooklyn, New York.

November 17, 1911—"Domestic and Public Hygiene," Dr. J. E. Pickard.

November 24, 1911—"Some of the After Effects of the Infectious Diseases," Dr. O. P. Johnstone.

December 7, 1911—"Freedom," Mr. Isador Jacobs, member of the League of Medical Freedom of Northern California.

December 14, 1911—"Medicine and Health," Dr. John A. Lewis, Superintendent of Hospital for Mental Diseases, Reno.

SECOND SEMESTER, 1911-1912

January 12, 1912—Address of welcome to the students, Regent J. W. O'Brien, Sparks.

January 19, 1912—"The Chicago Land Show," Mr. Charles A. Norcross, Commissioner of Industry, Agriculture and Irrigation for Nevada.

January 26, 1912—"Woman Suffrage," Mrs. H. Stanislawski.

February 2, 1912—"The Militant Suffrage Movement in England," Miss Anne H. Martin.

February 13, 1912—"Abraham Lincoln: The Man of Destiny," Dr. Chas. F. Aked, Pastor of the First Congregational Church, San Francisco.

February 23, 1912—"How our System of Bank Reserves Works Against the Interests of the Small City," Dr. Romanzo Adams.

March 1, 1912—"Dickens: The Humorist," Dr. Herbert W. Hill.

March 15, 1912—"Some Ethical Tendencies of Today," Dr. Martin A. Meyer, Rabbi of Temple Emanu-el, San Francisco.

April 19, 1912—"Equal Suffrage," Miss Charlotte Anita Whitney, President of the Civic League of California.

MUSICALE—DECEMBER 1, 1911

Prelude (Chopin), Mrs. Kepner.

Memory (Tourgee), Mrs. Lee.

Miserere (Verdi), Miss Morrison.

Voi lo Sapete (Mascagni), Un bel di Vedrenio (Puccini), Madame Kempre.

Sextette (Donizetti), Last Rose of Summer (Flotow), Miss Morrison.

See the Pale Moon (Campana), Mesdames Kempre and Lee.

To the Spring (Grieg), Mrs. Kepner.

Ah, Fors'e Lui (Verdi), Pace, Pace, Mio Dio (Verdi), Madame Kempre.

ORGANIZATION AND ADMINISTRATION

FOUNDATION

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko by a law approved March 7, 1873, but was moved to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University began with the academic year 1886–87.

The State Normal was authorized by an Act of the Legislature approved February 7, 1887, and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS

The University maintains the following Colleges and Schools, which aim to meet the best ideals of modern university life and training:

I. The College of Arts and Science.

II. The College of Agriculture:
 1. The School of Agriculture.
 2. The School of Domestic Science.

III. The College of Engineering:
 1. The Mackay School of Mines.
 2. The School of Mechanical and Electrical Engineering.
 3. The School of Civil Engineering.

IV. The College of Education.

V. Summer Session for Teachers.

GOVERNMENT

Under the Constitution and laws of the State of Nevada, the government of the University is vested in a Board of Regents, consisting of five members elected by the people. The immediate control is vested by law in the President under the direction of the Board of Regents. The administration is directed by the administrative officers and the Academic Council with the approval of the Board of Regents.

THE PRESIDENT

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be Chairman of the Academic Council and ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, subject to the approval of the Academic Council and Board of Regents, appoint the standing committees and shall name the chairmen of such committees.

THE VICE-PRESIDENT

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE REGISTRAR

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the student and the administrative and academic committees.

He shall prepare, subject to the approval of the President and the Academic Council, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be secretary of the Council and shall keep a record of its proceedings.

THE COMPTROLLER

The Comptroller is the accountant of the University; it is his duty to receive all drafts, checks, and moneys, whether sent to the President or to the Secretary of the Board of Regents, or to any employee of the University, or to any other official, or to any bank; and these shall be turned over to him for endorsement and deposit. He shall have charge of the bookkeeping and accounting of the University. He shall also be the custodian of all deeds, abstracts, and similar legal papers of the University.

THE ACADEMIC COUNCIL

The Academic Council consists of the President of the University, all professors and associate professors, the Registrar, the Librarian, such assistant professors as have been upon the rolls of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Regents, determine.

The Academic Council is vested with all of the powers and duties usually vested in the faculties of similar institutions.

All general University regulations, statutes, and rules as to the matters within the province of the Faculty, shall be initiated in and passed by the Academic Council, and shall be in force, subject to the power of disapproval in the Board of Regents and in the President of the University. However, no regulation, statute, or rule involving a change in the educational policy of the University in respect to the requirements of admission, the course of study, or the conditions of graduation, shall take effect as above until it has been submitted to the Board of Regents for their approval.

The Academic Council shall formulate the duties and control the policy of the several committees.

The Council shall recommend to the President of the University, and he to the Board of Regents, the candidates for graduation.

A majority of its members shall constitute a quorum of the Academic Council.

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

The standing committees shall be as follows:

1. Student Affairs for Men.
2. Student Affairs for Women.
3. Athletics.
4. Public Exercises.
5. Honors and Scholarships.
6. Public Health.
7. Delinquent Scholarship.
8. Military Affairs.
9. Admission and Advanced Standing.
10. Registration.
11. Graduation and Theses.
12. Schedules and Examinations.
13. University Publications.
14. Library.
15. Senior College and Graduate Courses.
16. Appointment Committee.
17. Advisory Committee.

Standing committees shall be appointed annually by the President, subject to the approval of the Board of Regents, and they shall enter upon their duties the first of July of each year.

SPECIAL COMMITTEES

Special committees may be appointed by the President of the University, to which the Academic Council may assign the consideration of any matter within its jurisdiction.

THE COLLEGE FACULTIES

The College Faculties shall have the directing of the educational policies in their respective colleges, and shall recommend to the Academic Council changes in the requirements for admission, the course of study, and the conditions of graduation.

ADVANTAGES AND EQUIPMENT

ADVANTAGES OF SITUATION

Reno, the seat of the University, is a thriving community of twelve thousand inhabitants. It is situated in the beautiful Truckee Valley, at the junction of three railroads, namely, the Southern Pacific Railroad, a trunk line between the East and the West; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railway. The imposing mountains which encircle the valley, the pure air and sunshine, give the town an enviable reputation for health and beauty. The numerous churches are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instructions and in their plans of work. The Young Men's Christian Association of Reno has a beautiful and modern building, equipped in a most up-to-date manner for athletics and for social activities. The proximity of Reno to the famous Comstock Lode, the mines of Tonopah and Goldfield, and the copper mines of eastern Nevada, enable the School of Mines to offer a large amount of practical training in mining operations.

ENDOWMENT AND SUPPORT

The endowments and appropriations on which the University has been founded and maintained are the following:

1. The donation of 21.15 acres of land by the Central Pacific Railroad, and the erection of a building in 1873–74 by the citizens of Elko at a cost of more than eighteen thousand dollars.

2. When the University was removed to Reno by an Act of the Legislature in 1885, the Board of County Commissioners of Washoe County paid to Elko County $20,000, and to the Board of Regents $5,000 to be expended in purchasing a site at Reno.

3. The fund derived from the Congressional Land Grant of July 2, 1862, the interest of which is included in the biennial appropriation.

4. Various appropriations by the State Legislature for buildings and other specified purposes.

5. The biennial appropriation by the State Legislature for the support of the University.

6. The Agricultural Experiment Station Funds, for demonstration and research in Agriculture, of $30,000 a year; the Hatch Fund, $15,000; the Adams Fund, $15,000.

7. The Morrill College Fund of $50,000 a year for Agriculture and Mechanic Arts, apportioned to the College of Agriculture and the College of Engineering.

BUILDINGS AND GROUNDS

The University Campus has an area of fifty-three acres and is beautifully located on an eminence overlooking the city. The academic buildings center upon a turfed quadrangle; broad walks and drives traverse the grounds. The natural advantages of the site lend well to landscape embellishment, and during the past year much has been done towards beautifying the grounds; a small artificial lake has been added, and lawns, shrubbery and trees used in such a way as to give the grounds an air of restfulness and refinement.

The following brief descriptions will give some idea of the principal buildings and the purposes for which they are used:

MORRILL HALL—Morrill Hall is a three-story brick building with a large basement. The Library occupies the entire basement. The administrative offices of the President of the University and the Department of Mathematics occupy the first floor. The Departments of Ancient Languages and History occupy the second floor. The Commercial Department and the Department of German occupy the third floor.

STEWART HALL—Stewart Hall is a three-story and basement structure. In the basement are the rooms of the Department of Domestic Science. The first floor is occupied by the Educational, Modern Language and English Departments. The second floor is devoted to the use of the University High School. The third floor is occupied by the Station Laboratory of the Botanical Department, and by the Department of Civil Engineering.

HATCH STATION—Hatch Station is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the office of the Director of the Station, the Departments of Agriculture and Animal Husbandry, Entomology, and Meteorology. The second floor of Hatch Station is given to the Depart-

ments of Biology, Veterinary Science, Bacteriology, and the State Hygienic Laboratory. The third floor is occupied as a general Biological Laboratory.

MACKAY MINING BUILDING—The Mackay Mining Building, the gift of Clarence H. Mackay, houses the Departments of Mining and Metallurgy, and of Geology and Mineralogy. It is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and a library occupy the space between the wings. The first floor contains the geological lecture room, office, and petrographic laboratory; the geological and mining library; the geological and mining museum; the weighing room, assaying laboratory, and metallurgical and mining laboratory. The second floor contains the mineralogical and research laboratories, drafting room, mining lecture room, and offices.

MECHANICAL BUILDING—The Mechanical Building is on the east side of the Quadrangle; the ground floor contains the machine shop, the blacksmith shop and the boiler room. The machine shop is furnished with screw-cutting lathes, a polishing lathe, a shaper, a universal milling machine, a universal cutter grinder, bench vises, wet and dry emery wheels, and a toolroom equipped with small machine tools and experimental apparatus for the use of shop students. The blacksmith shop has forges and the necessary tools. The second floor accommodates the wood-working shop. This shop is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools.

ELECTRICAL BUILDING—The Electrical Building is situated just north of the Mechanical Building. This is a handsome structure of brick, with stone facings and trimmings. The spacious laboratories are completely equipped with the most modern machinery and appliances for the study of electrical, mechanical, and civil engineering. On the first floor are located the lecture rooms and the electrical, gas and steam engineering laboratories. The second floor contains the library, drafting rooms and fuel-testing laboratory.

PHYSICS BUILDING—The Physics Building, which is in the main devoted to the Department of Physics, is a substantial two-story brick building. On the first floor are the balance room, the darkrooms, the storage battery room, the shop and

the laboratories. A photometer bar occupies the larger dark-room. The storage battery room is wired for seventy cells and is provided with a switchboard adapted for either charging or discharging the batteries. The laboratories are fitted up with high-grade apparatus of modern type. The electrical laboratory is supplied with the best forms of American and German instruments, such as galvanometers, standard resistances, standard condensers, standard Weston and Carhart-Clark cells, resistance boxes, Wheatstone bridges, voltmeters, ammeters, etc. The apparatus used for heat and sound is the best obtainable. For work in light, lenses and mirrors to be used in measuring focal lengths, gratings to be used in measuring the wave-length of light, a ruling engine to be used in making gratings, refractometers, spectrometers and prisms to be used in determining the indices of refraction, are all available for student use. The shop contains a lathe and a full set of tools for all kinds of metal work. The second floor contains the lecture room with a seating capacity of eighty persons, the apparatus rooms and the offices. The lecture room is equipped with projection screens, wall galvanometers, a switchboard provided with direct and alternating current terminals, a large static machine, and a lecture room table provided with gas and water mains. The Department of Art and Freehand Drawing occupies one room on the first floor.

CHEMISTRY BUILDING—The Chemistry Building is a two-story gray stone building standing on the west side of the quadrangle. On the first floor are found the inorganic, qualitative and quantitative laboratories, a balance room, stockroom, and the professor's private laboratory, which is equipped for electro-chemical work. The qualitative laboratory accommodates sixty-five students, and the quantitative, which is also used as an organic laboratory, accommodates thirty-six students. Both laboratories are supplied with hoods, gas, water, steam-evaporating pans, compressed air, and direct-current electricity. The chemical laboratory of the Agricultural Experiment Station occupies the south half of the second floor. This laboratory has been wholly remodeled and equipped for organic research. It contains four working desks supplied with gas, water, and steam, commodious hoods, motor-driven centrifuge, vacuum and compressed-air systems, electric ovens, etc. Adjoining this laboratory is an office for the research chemist, and one for the food and drug chemist. The second floor also contains a lecture room accommodating seventy persons; the weights

and measures apparatus and an exhibition room for pure food and drug products; two stockrooms, a darkroom for photographic work, an office and a department library. The basement is divided into two compartments, one being used as a furnace and combustion room, the other as an acid room. All the laboratories are heated from the central heating plant.

LINCOLN HALL—Lincoln Hall, the men's dormitory, is a three-story brick building, built after the plan of such halls in use at the larger eastern colleges, and is a tasteful and comfortable home for one hundred young men. The building is heated from the central heating plant. There is hot and cold water on each floor, with shower baths, lavatories, etc. The rooms are furnished throughout with the exception of bedding and linen, which are supplied by the occupant. The Hall is under the management of the University, and is run at cost; the rent is about fifty cents per week, or nine dollars for the semester. Excellent board is furnished in the Dining Hall for sixteen dollars per month. Thus, students patronizing Lincoln Hall are enabled practically to live for cost.

MANZANITA HALL—Manzanita Hall, the girl's dormitory, is a large brick building with granite facings. It is modern in style and equipment, is steam-heated throughout, and provides an attractive and comfortable home for about seventy-five girls. The rooms are single and in suites of bedroom and study. The bedroom contains two single beds, two attractive dressers of oak or birdseye maple, a small table, and chairs. Each bedroom has two large closets. The study has a bookcase, a big leather-covered study table, and comfortable chairs. There are a few suites of three rooms, with two big bedrooms for four girls, and some with one large and one small room for three girls. The woodwork in all the rooms is stained dark-brown, and the rooms are a lighter, but subdued, shade of the same color, toning in softly with the wood, making an admirable background for pictures and college pennants. There is a large recreation room, where the girls read and talk, play games, dance and sing, and a well-appointed drawing room, where guests are received. The floors throughout the building are of maple.

GYMNASIUM—The Gymnasium is a modern structure sixty feet wide and one hundred and twenty feet long. It is equipped both as an armory for the use of the Military Department, and as a gymnasium for athletic training. The equipment is mod-

ern and ample for all college purposes. Convenient toilet rooms and lockers for the students are provided. The Gymnasium, on account of its size, is used as a hall for General Assembly and the more important University functions.

PRESIDENT'S HOUSE—The President's house is situated on the southeast corner of the Campus. It is colonial in style, and is a fine, commodious house, an ornament to the University.

HOSPITAL—The University Hospital is situated between the Gymnasium and Lincoln Hall. This is a one-story building and contains six rooms. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. A matron is in charge of the Hospital. Students may have any physician whom they prefer.

DINING HALL—The Dining Hall is a one-story brick building on the east side of the Campus. It is conveniently equipped for the accommodation of one hundred and fifty students.

GREENHOUSE—A working greenhouse is on the east side of the Campus. It is used by the Departments of Biology, Botany and Horticulture, and also for the study of plant industry and the growing of plants.

HEATING PLANT—A central heating plant costing $50,000 supplies the buildings on the Campus with heat. It consists of two large boilers, pumps, engines, motors, etc., and is operated in connection with the mechanical engineering laboratories.

THE MACKAY FIELD

The natural amphitheater on the Campus, which had been leased to the University for a number of years by the late Regent Evans, was purchased for the University by Mr. Clarence H. Mackay and provision made for its improvement. In order to make room for other branches of athletics, such as basket-ball and tennis, the Nevada Legislature of 1909 made provision for the purchase of additional land to the south of the old field, so that now about ten acres of land is being used for athletic purposes. The improvements donated by Mr. Mackay include a Training Quarters Building, situated on the east side of the field. This building has showers, baths, locker and dressing rooms, a committee room and a lounging room. Directly opposite to this on the west bank are the bleachers and colonnade. The natural slope of the bank has been util-

ized so that the field closely resembles the stadium used at the ancient Olympic games. There are seventeen tiers of concrete, with a colonnade for a covered grandstand in the rear. The seating capacity is about two thousand.

Situated between these structures is a full-sized Rugby football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard dash.

LIBRARIES

GENERAL LIBRARY

The University Library is located in the basement of Morrill Hall. It contains twenty-two thousand bound volumes and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works and reference volumes of various kinds. The books are catalogued according to the Dewey Decimal Classification System.

The reading room is supplied with daily and weekly newspapers and with many of the best periodicals. The list includes about 280 subscriptions to the leading cultural, scientific, and technical magazines.

The Library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work.

To the general public is extended the use of the Library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students. Borrowers residing outside of Reno are asked to pay the necessary postage or expressage on the books loaned to them.

AGRICULTURAL EXPERIMENT STATION LIBRARY

The Agricultural Experiment Station Library, of more than two thousand bound volumes and a large number of pamphlets, is in the northern wing of Hatch Station. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, general works on agriculture and the related sciences, and on irrigation, and herd books of livestock associations. Many current agricultural periodicals are on the tables in the reading room. The library is catalogued and classified, and suited for ready reference. It is open daily, and, while intended

primarily for the use of the Station Staff, it is also accessible to the public.

MINING LIBRARY

All reference books, text-books, technical journals and works pertaining to geology and mineralogy, mining, metallurgy and engineering are concentrated in one large study room which is conveniently located upon the ground floor of the Mackay Mining Building. This library is open at all times during the sessions.

Additional departmental libraries are maintained for biology, chemistry, education, geology, physics, etc.

TRAVELING LIBRARIES

The University has twelve traveling libraries for the use of Nevadans outside of Reno. Numbers 1 and 2 have twenty-five books each, the others have fifty books apiece. So far as practicable these are loaned to schools or communities that will pay transportation charges. The "travelers" may remain three months or longer in a place. Then they return to the University Library, are checked up and made ready to loan again. The University will continue this in a modest way until the work can be done better by others.

CITY AND STATE LIBRARIES

Besides the University libraries, members of the University have the facilities of the Reno Free Library, and of the State Public Library which is located at Carson City. This latter library has many rare volumes and reports, and is considered to contain the finest law library in the West.

LABORATORIES

Physical Laboratory—The work of the Physical Laboratory is carried along on four distinct lines, each with its separate rooms and its own special equipment. The General Laboratory contains a Freshman and a Sophomore Laboratory for work in sound, mechanics, heat, light, magnetism, and electricity; and a shop. The equipment of the Freshman and Sophomore Laboratories consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the work. Aside from the main laboratories there is a separate room for experiments in heat; a weighing room, containing

four Becker balances mounted on piers; a darkroom; and a department library and reading room, which is also available for student use while writing up the laboratory exercises. The department shop contains a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular and linear dividing engine, and a direct-current dynamo with two armatures, furnishing current at various voltages. All of the laboratories are supplied with water, gas, and electricity.

Laboratory for Quantitative Analysis—This laboratory accommodates thirty-six students. It is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

Laboratory for Qualitative Analysis—This laboratory will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas, and fume closets.

Experiment Station Laboratory—In this laboratory students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

General Biological Laboratory—The biological laboratory has recently been remodeled, enlarged, and refurnished. There are thirty-five laboratory tables, each of which is provided with a miscroscope, reagent lockers, and six drawers fitted with combination locks. The tables have plate-glass tops, resting on rubber mats, so that they cannot be injured by stains or chemicals. In addition to these there are a few operating tables with zinc tops, designed for operating demonstrations and dissections. The general equipment and supplies are kept in wall cases and cabinets, made of quarter-sawed oak and similar to the tables in design. The department now has thirty-seven first-class combined microscopes, four of which are equipped with high-power lenses and all other accessories for the most delicate and precise microscopical work. Among the larger and more expensive instruments are an electric incubator, a Lillie paraffine oven, an electric centrifuge, and sterilizer. An important adjunct to both the class and laboratory

work is a combined microscope and lantern-projection apparatus, which enables the instructor to project microscopic objects as well as photographic illustrations, magnifying up to 3,000 diameters, upon the screen, where it can be observed by the whole class at one time.

Histological and Embryological Laboratory—This laboratory is equipped with all the necessary apparatus for doing general or research work in these subjects.

Bacteriological Laboratory—This laboratory has also been recently fitted up with new apparatus for research in pathology and bacteriology. It is used chiefly for Experiment Station work, and for the work of the State Hygienic Laboratory, but is available for demonstration purposes for students taking elementary bacteriology, and can accommodate a few students who desire to do more advanced work.

Experiment Station Botanical Laboratory—This laboratory is also used by advanced classes in botany and horticulture.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in entomology. It contains also the Photographic Laboratory of the Experiment Station.

Psychological Laboratory—This laboratory, which is new this year, is located on the first floor of Stewart Hall, and is equipped with apparatus for class demonstration, experiments, and original research work in psychology and education.

Geological and Mineralogical Laboratories—The Department of Geology and Mineralogy is provided with reference collections illustrating the minerals, rocks, and fossils, and with class collections for study and determination. The Mineralogical Laboratory is arranged, for the present, for the accommodation of single sections of forty students. There is, in addition, a laboratory fitted up for microscopic work, equipped with petrographical microscopes and the necessary accessories. It has also a set of mineral thin sections cut in definite direction, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. A separate grinding room is provided with apparatus for making thin sections of rocks and minerals. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides furnishes additional illustrative material for lecture work.

Chemical Laboratory of the Mackay School of Mines—The Chemical Laboratory is fully equipped with the usual desks, hoods, hot-plates and air-baths. Each desk is provided with gas, compressed air, and electricity. Steam connections are provided for drying-coils and still. Electric air-baths and drying-pans are provided for overnight work. A small electric-driven, five-jar Abbe mill is in use for fine grinding tests. Four four-gallon slime agitators, driven by small electric motor, are used for slime tests. A direct-connected electric-driven exhaust fan draws the air from the hood in the parting room and from this laboratory. A complete electrolytic outfit for lead, copper, and other determinations has been installed. This laboratory will accommodate sixteen students.

Weighing Room—Connected with both the Chemical Laboratory and the parting room is the weighing room. Substantial piers carry the balances. Both chemical and bead balances for assaying work are placed in this room. The equipment consists of two analytical balances and eight bead balances. Different makes of balances are in use, such as the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger.

Parting Room—The cleaning of beads, parting, and ignitions are provided for in a separate room, convenient to the weighing room and Assaying Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

Assaying Laboratory—The preparation of crucible charges and all furnace work is done in the Assaying Laboratory. This laboratory is equipped with six Thompson pulp scales, three double-muffle soft-coal furnaces, three large oil fusion furnaces, four small oil-fired muffles, two coke muffle furnaces, and one coke fusion furnace. Crude oil and distillate are used for the oil furnaces, compressed air being used to spray the oil. The laboratory will accommodate twenty students.

Metallurgical and Mining Laboratory—The metallurgical equipment includes the following machinery, all of commercial size: a three-stamp battery and feeder, amalgamating plates on steel table, a four-foot Union concentrator, a Wilfley concentrating table, a two-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of one-ton capacity, a 3x8

roasting furnace, an eighteen-inch amalgamating pan, a sample crusher, and sample grinder. A tube mill of 150 pounds capacity and a small Pachuca agitator are provided for slime tests.

The mining machinery equipment consists of an Ingersoll-Sargent drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any mesh coarser than a 40 screen; coarse and fine concentrations of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls or the tube mill—the roasting furnace enabling ores to be given a chloridizing or an oxidizing roasting before treatment in the vats—and, finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-h.p. and a 5-h.p. induction motor drive all the machinery through separate line shafts.

Steam and Gas Laboratory—The equipment is very complete; it consists of a Corliss engine, three automatic cut-off high speed engines, a Curtis turbine, a De Laval turbine, a three-cylinder Standard gas engine, a Fairbanks-Morse gas engine, an Alden dynamometer, a Sargent gas calorimeter, engine indicators, calorimeters, gages and gage testers, pyrometers, gas analysis outfits and numerous other pieces of apparatus essential in making tests and investigations on steam and gas machinery.

Electrical Laboratory—Through the liberality of the State Legislature the equipment of the Electrical Engineering Labaratory is now one of the best in the country. Machines of practically all standard types are available for study and operation. In addition to this apparatus there has been provided the necessary controlling devices and instruments for handling the wide range of voltages and currents used in experimental tests. The equipment is especially designed for study of the electrical engineering problems which occur in commercial work, and consist of direct and alternating current generators, motors and converters, high and low potential transformers, a

Tirrell regulator, synchroscopes, power factor meter, rheostats, voltmeters, ammeters and watt-meters, multipliers and numerous other smaller pieces of apparatus.

Civil Engineering Laboratory—A first-class Riehle testing machine, 1909 model, 200,000 pounds capacity, operated by an electric motor, a complete cement-testing outfit, and a good assortment of surveying instruments comprise the laboratory equipment of this department. The large testing machine will be moved from the Physics Building to the new Electrical Building. It is used for the testing and illustration of the principles governing the strength and elasticity of materials used in engineering construction.

SCIENTIFIC COLLECTIONS

GEOLOGICAL AND MINING MUSEUM

The northwest wing of the Mackay Building is devoted to a museum in which the collections of the departments connected with the School of Mines are exhibited. The museum is furnished with beautiful display cases of quartered oak, in which are shown:

1. A type collection of minerals arranged as sulphides, oxides, silicates, etc., the labels giving both the common and mineralogical names, the chemical composition, the locality from which the mineral was obtained, the name of the donor, and such information as is of interest to the general public. This is a large and growing collection containing specimens of over five hundred different mineral species, many of them quite rare, and has been gathered from all over the world.

2. A type collection of rocks containing examples of the more common variety of igneous, sedimentary and metamorphic rocks, labeled as to name and locality. These include not only rocks from North America but from Europe as well.

3. An exhibit of the mineral resources of Nevada. The object of this collection is to illustrate the mineral resources of Nevada, and show the geology of several of its mining camps. The greater part of this collection was obtained from the collection exhibited at the session of the Mining Congress at Goldfield in 1909. It is arranged by counties, the labels giving the name of the specimen, its value, the mining district, and name of the donor. The collection includes specimens of gold, silver, lead, copper, zinc, iron, manganese, mercury, antimony, arsenic, tungsten, nickel, cobalt ores, sulphur, barite, gypsum, borax, salt, diatomaceous earth, coal, kaolin, graphite, marble, building stones, turquoise, variscite, opal, mica and other minerals and rocks of economic importance. This collection is being built up as rapidly as possible through gifts from the mining fraternity of Nevada and by systematic collections during the summer vacations. It will eventually form an epitome of the mineral resources of the State, and is already a striking illustration of the varied and extensive mineral wealth of Nevada.

4. The nucleus of a collection illustrating the different types of mining machinery and appliances. This includes a small

five-stamp mill owned by James Fair when a boy and used by him to stamp out pin money from ore given him by his father; two of the first air drills ever used in mining, a Waugh stop, an Ingersoll-Sargent drill on a tripod; samples of the different wire cables used in mining; models and drawings of the different methods of timbering; methods of loading and firing drill holes, and different types of lamps, fuses, surveying instruments, etc., used in mining.

5. Maps, models, and pictures. These include geological maps of many of the mining districts of Nevada, and a large map showing all the underground workings of the Comstock Lode on a scale of one hundred feet to the inch. About thirty panoramic photographs of the principal mining camps in Nevada are framed and displayed along the wall. In the center of the museum is the large plate-glass model of the workings of the Mohawk mine, Goldfield, and a wooden model of the Holmes and Northern Belle mines of Candelaria.

6. Collections. Among the several collections received during the past two years are the loan collection of the United States Geological Survey of the rocks and minerals of Goldfield; the collection of rocks and minerals formerly in the State Capitol at Carson City; the Cole collection, gathered through thirty years by Dr. A. M. Cole of Virginia City; the Malcolm McDonald collection, presented to the University after the death of Mr. McDonald, and several other smaller collections received through various sources.

7. Besides the above, the museum possesses a considerable number of fossils, both of animals and plants, a few Indian relics, and other miscellaneous material of interest.

The museum is open to the public during the school year, and as far as possible every facility will be placed at the disposal of any one who wishes to inspect or study the various collections.

The continued growth of the museum depends largely upon the generosity of those engaged in the development of the mineral resources of Nevada, and contributions of specimens of ores, minerals, and other interesting and instructive material is earnestly desired.

HERBARIA

The Nevada Agricultural Experiment Station herbarium now contains 12,000 mounted sheets, nearly all of western species, and at least half of them from Nevada. Certain of the forage

plants, as the grasses, clovers and lupines, are especially well represented. Although as yet small, this collection is of considerable importance, as it contains a number of types and typical plants obtained from type localities.

The private herbarium of Dr. A. A. Heller, consisting of about 10,000 specimens, is also deposited with the University. The greater part of this collection is made up of California plants, and in it are many types and typical material from type localities. It is especially strong in the genus Lupinus, over 100 species being represented.

Connected with these herbaria are a large number of negatives depicting various phases of plant life, and a seed collection of 780 specimens.

OTHER COLLECTIONS

Other scientific collections from parts of the working equipment of the Departments of Biology, Entomology, etc.

NEEDS OF THE UNIVERSITY

1. Among other University needs is a library and administration building, to cost with furnishings $250,000. The present space allotted to the library, the basement of Morrill Hall, is inadequate. New books are rapidly accumulating, and during the last year several new book-stacks have been required. It is difficult to see where any more stacks can be placed in the present stackroom to meet the needs of the constant growth. Hence a new and larger abode for the library is needed. Moreover, there should be a building especially designed and adapted to the needs of a library, prominent among which is a sufficient amount of light, which is not obtained in the present basement. The book-stacks are necessarily large, and hence shut off the light from the windows, the Librarian frequently being obliged to use the light of a candle in order to find a book. The new library building should provide for the admission of light from above, through skylights, which would insure the diffusion of a good light throughout the library. Another fact contributing to the need of a new building is the danger of fire in the present library. If the books were burned, some of them could not be replaced.

2. A biological building and museum for the use of the Department of Biology, the museum wing of this building to be used for scientific collections in natural history so that they can be made available to students and to the public.

3. Scholarships. The friends of education, and particularly the friends of the University, are urged to consider the foundation of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a university course, but whose financial resources are inadequate to obtain it for them. The University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands made upon it. No means of perpetuating a healthful and elevating

influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the growing centuries.

4. An endowment of professorships in the University. The sum of $50,000 will provide an adequate endowment for a chair in the University, the interest of this endowment fund going to pay the salary of the professor of the special department.

LECTURES AND FACULTY ASSOCIATIONS

PUBLIC LECTURES

GENERAL ASSEMBLY

A general assembly of all students of the University and all the members of the Faculty is held every Friday. This is the lecture service of the week, and is under the special direction of the President of the University. These weekly lectures are given by members of the Faculty and by men and women of special eminence in particular fields of study, travel, and business enterprise. Attendance is required of all students.

UNIVERSITY EXTENSION LECTURES

Lectures on various subjects by members of the Faculty of the University and Staff of the Agricultural Experiment Station will be given at different points in the State as arrangements can be made between the local communities and the University.

THE UNIVERSITY SCIENTIFIC ASSOCIATION

The University Scientific Association is an organization of those members of the Faculty who are interested in scientific research. The purpose of the organization is to broaden the outlook and to come in touch with scientific progress outside of one's own sphere of activity. Biweekly meetings are held in the lecture room of the Mackay Building. Reports are presented and discussed at each meeting. The subjects of the reports are either the result of individual research, or articles of general interest that have recently appeared in the scientific journals. The meetings are open to visitors. Advanced students find the meetings of considerable value.

SCHOLARSHIPS, GIFTS, AND PRIZES

The following scholarships and prizes are offered for the purpose of assisting deserving students and rewarding excellence in scholarship:

1. The F. O. Norton Scholarship of fifty dollars to the most deserving student in the Mackay School of Mines.

2. A scholarship of one hundred dollars from a friend of the University. This scholarship is awarded at present to Robert Farrer of the College of Arts and Science, at the request of the donor.

3. Five Regents' scholarships of fifty dollars each, to students who show in the highest degree the general qualities which go to make successful men and women. These scholarships are apportioned as follows: One to the most deserving student in the Sub-Freshman year; one to the most deserving student in the College of Education; three to the most deserving students in the other colleges of the University.

4. The H. H. Howe Scholarship of two hundred dollars, payable annually, given by Mr. C. B. Zabriskie of New York, in loving memory of Principal H. H. Howe. This scholarship is awarded by Mrs. H. H. Howe and the President of the University.

5. A scholarship of one hundred dollars, the gift of Azro E. Cheney, LL.D., to be awarded to that student of the University who, in the opinion of the President and Faculty, has made the most progress in scholarship, and has been the best example of student conduct during the college year.

6. A scholarship of one hundred dollars annually, given by Ralph S. Stubbs of New York. This scholarship is given to the most deserving student in the University and is to be used for his or her support while in college.

7. A scholarship of two hundred dollars, given each year for five years, the gift of George Wingfield of Reno. This scholarship will be given—one-half the first semester and one-half the second semester—to the most deserving student.

8. The Philo C. Bennett prizes, two of forty dollars each, for the best essay or essays on the principles of free government.

9. A gift of nine hundred dollars has been given by Mrs. George S. Nixon of Reno to the Young Women's Christian Association of the University for the support of a resident secretary for the year 1912–13.

10. In addition to the above is a gold medal awarded annually to that member of the graduating class who has attained the highest average grade in scholarship throughout his or her college course.

11. A prize of twenty dollars is offered for 1912–13 by a member of the Alumni Association to the undergraduate class in the University which excels in the singing of college songs. The contest is to be held in the spring under the direction of a committee appointed by the classes, judges to be appointed from town citizens not connected with the University.

THE RHODES SCHOLARSHIPS

Special attention is called to the Rhodes Scholarships in Oxford University, England, to which one appointment from the State of Nevada will be made for each of the years 1913, 1914, 1916, 1917, and so on, omitting every third year. The Scholarships are each of the value of approximately $1,500 a year, and are tenable for three years.

Scholars will be selected from candidates who shall have passed a qualifying examination in Latin, Greek, and Mathematics. If necessary, Greek may be temporarily postponed, but only those candidates who have passed in at least Latin and Mathematics will be eligible for a Scholarship. Examinations are usually set in the month of October preceding the year for which each appointment is made. Any person who has passed the examination once will be eligible for election at any subsequent time if he satisfies the other conditions of eligibility.

In addition to the requirements of the qualifying examinations, a candidate to be eligible for election from the State of Nevada must—

(1) Be a citizen of the United States and be unmarried.

(2) Be a student in or a graduate of the University of Nevada, or, if a student in some other university or college, a resident of the State of Nevada.

(3) By the first of October of the year for which he is elected have passed his nineteenth and not have passed his twenty-fifth birthday.

(4) By the first of October of the year for which he is elected have completed at least his Sophomore year in the University of Nevada or in some other recognized degree-granting university or college of the United States.

The appointments thus far made to Rhodes Scholarships from the State of Nevada are as follows:

1907—ARTHUR LEONIDAS ST. CLAIR, Deeth, Nevada.

1908—WILLIAM SCOTT UNSWORTH, Reno, Nevada.

1910—STANLEY MAYHEW WILTON, Goldfield, Nevada.

1911—CEDRIC HARDING BEEBE, Reno, Nevada.

The Rhodes Scholarships offer an unusual opportunity both for a university education in the Liberal Arts, the Sciences, Engineering or the professions of Jurisprudence or Theology, and for travel among the chief centers of life and activity in foreign lands. These advantages, with the gift of financial means ample for their enjoyment, have made these Scholarships the most attractive ever established.

Further information about Oxford and the Rhodes Scholarships may be secured by addressing President J. E. Stubbs, Chairman of the Committee of Selection for the State of Nevada, University of Nevada, or the Secretary of the Committee, Rev. Samuel Unsworth, Reno, Nevada.

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STUDENT AFFAIRS

GOVERNMENT OF THE STUDENTS

In the government of the University the largest liberty consistent with good work, good order, and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of University life are advised to remain at home or go elsewhere.

STUDENT ORGANIZATIONS

The Associated Students—The student body is organized into an association called "The Associated Students of the University of Nevada." Through this association the students handle all matters relating to the student body as a whole, and control all athletic interests of the University with the approval of the Faculty Committee on Athletics. The officers of this association are elected by popular vote. By the payment of the athletic fee of $4 the student receives the A. S. U. N. card which entitles him to a vote in the association and to admission to all local games, contests or other events under the association's management.

OFFICERS, 1912–1913

President	W. H. SETTLEMEYER, '13
Vice-President	HAROLD LAYMAN, '13
Secretary	EUNICE CAGWIN, '13
Treasurer	NAT WILSON, '13
Women's Athletic Manager	LILLIAN DAVEY, '14
Graduate Manager	SILAS E. ROSS, '09
Class Representatives for Executive Committee	LESTER HARRIMAN, '14 JOE MCDONALD, '15

The Engineering Society—All engineering students and the engineering faculty are members of the Engineering Society. This society meets once or twice a month during the semester. Engineers and technical men are invited to address the members. The purpose of the society is to broaden the viewpoint and increase the knowledge of the students, as well as to extend their acquaintance among practicing engineers.

The Agricultural Club—The Agricultural Club consists of students of the Agricultural College. The purpose of the club and its motto are the same: "More farmers and better farms."

Christian Associations—The Young Men's and the Young Women's Christian Associations each have a branch organization among the students. Through private benefaction, provision has been made for the support of a resident secretary for the Young Women's Christian Association for the coming year, and her services will be at the disposal of the members and their friends.

Other Organizations—The students have established fraternities, sororities, literary societies, musical and social clubs.

STUDENT PUBLICATIONS

The students publish a weekly paper known as the *U. of N. Sagebrush*. It has been the custom of the Junior Class to publish an edition of the Junior Annual known as the *Artemisia*.

U. OF N. SAGEBRUSH

Editor, 1912–13.....ROBERT FARRER, '14
Business Manager.....LLOYD B. PATRICK, '13

ATHLETICS

The University is provided with an excellent gymnasium, and an instructor is in charge of the Department of Physical Education for Women. The physical training for men is included in the Department of Military Science and Tactics.

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. Rugby football, baseball, track, basket-ball, and tennis are the games of special prominence at the present time. The policy of the University is to foster the spirit of honor and manliness in athletics, to suppress evil tendencies, and to see to it that athletic sports do not encroach upon the claims of scholarship.

To represent the University of Nevada in any public contest, a student must conform to the following rules:

1. He must be an amateur.

2. No student who is taking less than eight hours University work or their equivalent, and who is not attending these classes regularly, shall be allowed to represent the University in an athletic contest.

3. No student shall represent the University in any athletic contest who, during the previous semester, failed in more than one-half or was conditioned in more than two-thirds of his work; providing, he shall not have made up one-half of his conditions within the first three weeks of the semester.

4. On the first of every month the captain of a team must submit a complete list of players comprising the squad to the Delinquent Scholarship Committee. The Delinquent Scholarship Committee shall, on receipt of this list, notify any student where work is unsatisfactory.

5. The captain of each team shall submit to the Delinquent Scholarship Committee at least ten days before each game a list of these persons from whom the team is to be chosen, and any person who, at that time, is reported as not passing in 60 per cent of his work shall be debarred from participating in that game.

6. He must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

7. He must pass a physical examination satisfactory to the Committee on Athletics.

8. Schedules for all games must be submitted to the Faculty Committee in Athletics and approved by them.

9. A similar approval is required in the case of every individual intending to represent the University of Nevada in any single contest.

MILITARY SCIENCE AND TACTICS

1. Appreciation of the advantages of military drill and training in the education of the youth, is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, and instills habits of obedience to lawful authority. A general knowledge of the system of National defense, of the organization of the Army and of the Navy, and their relation to the civil power, is considered essential to intelligent suffrage.

2. The department is in charge of an officer of the United States Army, detailed by the War Department as Professor of Military Science and Tactics, and as Commandant of Cadets.

3. Students receiving military instruction are designated "Cadets," and are organized into a battalion of infantry, officially designated as "The University of Nevada Battalion of Cadets."

4. The Battalion of Cadets is composed of all male students of the University, including those in the Preparatory, Commercial, Normal, and Special classes, with the following exceptions:

a. Students physically disqualified permanently. Those temporarily disqualified may be given light duty in the Signal Corps Department.

b. Students twenty-seven years of age or over.

c. Students who previously have had the military training required by the War Department.

d. The students serving in the band are excused from other military duties. Ordinarily no cadet will be assigned to the band until he has satisfactorily completed the "schools of the squad, soldier, and company."

5. Cadets are required, upon entrance, to provide themselves with a uniform of prescribed design, consisting of blouse, trousers, cap, black shoes, white gloves, together with the insignia appropriate thereto; and also with a khaki service uniform.

6. Cadets will wear the uniform at all times while receiving military instruction.

7. The wearing of composite uniform is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

8. Appointments in the Battalion will be determined by military ability, which shall be decided from a careful consideration of the following points:

a. Character.
b. Attendance.
c. Military conduct.
d. Zeal.
e. Soldierly bearing.
f. Aptitude for command.
g. Knowledge of drill and other duties as determined by examination and practical application.
h. Recommendation of superior officers.
i. Length of service in the Battalion.

Generally the commissioned officers are taken from the Senior class, the sergeants from the Junior class, the corporals from the Sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

10. Every cadet who is a candidate for graduation from any of the schools of the University will be required to complete the prescribed course of military instruction, aggregating 8 units. Other cadets will receive an amount of military training proportionate to the length of their attendance at the University.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military

service will be forwarded to the War Department and to the Adjutant-General of the State.

13. The punishments to which cadets are liable are:

a. Suspension of privileges. Private reprimand.

b. Suspension from the University. Reduction to ranks.

c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Commandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensable to discipline. Military authority will be exercised at all times, with firmness, kindness and justice; superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to perform the prescribed military duties unless excused in advance by the President or the Commandant. In case of absence without previous excuse, a written explanation will be submitted upon resuming duty. In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to University schools shall be by examination; but a graduate of an accredited school will be received without examination in the subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. Each applicant must supply evidence that his school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination upon the recommendation of the professor under whom the special studies are to be taken; provided, they are at least twenty years of age. The Committee on Admission and Advanced Standing may grant exceptions to this rule for adequate reasons. Special students cannot become candidates for a degree until they have satisfied the entrance requirements of the school or college in which the degree is sought. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

VISITORS

With the consent of the instructors concerned, students may be admitted to departments as visitors. Visitors shall be enrolled and pay fees, but receive no credit towards a degree.

GRADUATE STUDENTS

Graduate students will be received upon the recommendation of the Committee on Senior and Graduate Courses and the departments in which they desire to pursue their work.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it is able to complete satisfactorily.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high-school teachers and members of the Faculty concerned with accrediting will be held each year on the day preceding the Academic meet.

SCHOOLS ACCREDITED FULLY OR IN PART

Schools	*Principals*
Austin	K. G. Lorentzen
Carson City	W. J. Hunting
Dayton	J. R. McKillop
Elko	P. G. McWhinney
Ely	Bernard Street
Eureka	P. F. McNally
Fallon	R. H. Fetter
Gardnerville	E. Otis Vaughn
Lovelock	Grace L. Moon
Reno	W. E. Ferguson
Sparks	E. E. Winfrey
Tonopah	A. H. Yoder
Virginia City	C. E. Houdeshel
Wadsworth	E. J. Posvar
Winnemucca	J. F. Graham
Yerington	L. W. Bartlett

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plain Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to all colleges the candidates must present

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

English a and b; Mathematics a and b; and 11 additional units, to be distributed in the various colleges as follows:

1. In the College of Arts and Sciences, and College of Education:
 a. Division I: Latin, 4 units; elective, 7 units.
 b. Division II: Language other than English, 2 units; History, 2 units; elective, 7 units.
 c. Division III: Mathematics c; Language other than English, 2 units; Science, 1 unit; elective, 7 units.
2. In the College of Agriculture:
 Language other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units; elective, 8 units[2].
3. In the College of Engineering:
 Language other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units (one unit, however, must represent advanced work); Mathematics c, d, and e, 2 units; elective, 6 units[3].

Description of Admission Requirements

1. ENGLISH (4 units)

The requirement in English includes both the study of the literature listed in Groups I–V and the work in grammar, composition, and rhetoric outlined below.

LITERATURE

I. Ivanhoe, Silas Marner, and the Vicar of Wakefield, or Henry Esmond; and, for outside reading, any six of the following: The Talisman, The Three Musketeers, Treasure Island, The Last of the Mohicans, The Jungle Book, Quentin Durward, Rob Roy, The House of the Seven Gables, The Tale of Two Cities, Lorna Doone, Emma, Oliver Twist, The Christmas Carol, Pilgrim's Progress, With Fire and Sword, The Cloister and the Hearth, the Newcomes, Les Misérables, The Crisis, The Virginian.

II. The Merchant of Venice, Julius Cæsar, Macbeth.

III. The Vision of Sir Launfal, The Chambered Nautilus, Thanatopsis, The Deserted Village, The Cotter's Saturday Night, Gray's Elegy, The Ancient Mariner, L'Allegro, Il Penseroso, Gareth and Lynette, or the Passing of Arthur, The Princess, and any two of the following: Michael, The Rape of

[1] This requirement will go into effect August 1, 1914.
[2] August 1, 1914, these units will be reduced to 6.
[3] August 1, 1914, these units will be reduced to 4.

the Lock, Childe Harold (Canto IV), Chaucer's Prologue, Lays of Ancient Rome; selections from Wordsworth, Shelley, Keats, and Arnold.

IV. The Alhambra, The Great Stone Face, The Ambitious Guest, The Gold Bug, The Purloined Letter; and, for outside reading, any two of the following: Hamlin Garland's Main Traveled Roads; Bret Harte's The Luck of Roaring Camp; London's The Call of the Wild; Kipling's The Day's Work; Maupassant's The Coward, The Piece of String, The Necklace; The Book of Ruth.

V. Franklin's Autobiography, or Thoreau's Wild Apples; Addison's Sir Roger de Coverly, or Carlyle's Essay on Burns, or Holmes's Autocrat of the Breakfast Table; Burke's Speech on Conciliation, or Webster's Bunker Hill Oration.

GRAMMAR, COMPOSITION AND RHETORIC

The aim of the course should be to train in correct expression and effective presentation of simple exercises in description, narration and exposition. A simple text-book in rhetoic should be used. An amount of grammar should be required sufficient to insure correct expression.

2. MATHEMATICS (4 units)

(*a*) Algebra (1 unit). Addition, subtraction, division and multiplication of algebraic expressions; simple equations; simple simultaneous equations of two or three unknowns; factoring; graphs; fractions; ratio and proportion; highest common divisor and least common multiples by the factor method; square root; radicals and fractional exponents simply treated; elementary treatment of quadratic equations.

(*b*) Plane Geometry (1 unit). Rectilinear figures; the triangle; parallel lines; the quadrilateral; polygon; circle; ratio and proportion; similar polygons; area of polygons and the circle.

(*c*) Advanced Algebra (1 unit). Review of elementary algebra; quadratic equations; simultaneous quadratic equations; exponents and radicals; binomial theorem; logarithms; determinants; mathematical induction; progression and other forms of series; theory of equations.

(*d*) Solid Geometry (½ unit). Lines and planes; dihedral and polyhedral angles; polyhedrons; prisms; pyramids; similar and regular polyhedrons; cylinder, cone; sphere; similar solids; mensuration of solid figures.

(*e*) Trigonometry (½ unit). The development of the general

formulæ of plane trigonometry with application to the solutions of plane triangles and the measurement of heights and distances. When possible about two weeks should be spent on spherical trigonometry.

3. PHYSICS (1 unit)

The requirement represents at least a daily exercise during one school year, which falls within the last two years of preparation for college. The course should cover the amount of material offered in any of the best modern text-books of Elementary Physics, such as Carhart and Chute's High School Physics, or the First Course in Physics by Millikan and Gale. The instruction should be based upon laboratory work by the student, performed under the teacher's supervision, and classroom demonstration by the teacher. The student's laboratory note-book should be presented to the Department of Physics at time of entrance.

4. HISTORY (3 units)

(*a*) English History (1 unit). A knowledge of the important epochs is required. Larned's History of England indicates approximately the ground to be covered. The main purpose of the requirement is to prepare for the intelligent study of English literature, therefore constant reference should be made to the literary development of the English people.

(*b*) Ancient History (1 unit). This includes The Beginnings of Civilization, or the early Oriental Theocracies; Greece and Macedonia; Rome to the time of Charlemagne. The amount required is indicated by West's Ancient History, or Wolfson's Essentials of Ancient History.

(*c*) American History and Civics (1 unit). A knowledge of the outline of American History, and of the nature of federal, state and local government. The requirement represents three things; the amount of material offered in a text-book in history, such as Channing's Student's History of the United States, a text-book in government such as Hinsdale's American Government, or Bryce's American Commonwealth (abr. ed.), or their equivalent, and systematic reading of assigned references, which should be summarized in a note-book.

5. LATIN (4 units)

a (1 unit). Collar and Daniell's First Latin Book, with the exception of the Colloquia, Collar's New Gradatim, and D'Ooge's Colloquia Latina, pp. 1–31, the exercises in the

latter to be read only at sight, represent the nature and amount of preparation required.

b (1 unit). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1–220, with prose composition, or an equivalent.

c (1 unit). Kelsey's Selections from Ovid, and Gayley's Classic Myths. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

(*d*) Vergil (1 unit). Vergil's Æneid, Books I–VI. Emphasis should be laid upon the development of the student's power to understand Latin prose and poetry in the original, and upon the thought of the authors read rather than upon the syntax. The writing in Latin of connected English sentences. In this prose work the emphasis should be laid upon the order of words, the simpler features of sentence structure and means of connecting sentences in paragraphs.

6. GREEK (2 units)

a (1 unit). Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences into Attic Greek. White's First Greek Book represents the amount of preparation required.

b (1 unit). Xenophon's Anabasis, Books I–IV, with questions on the forms, syntax, and subject-matter. The translation into Attic Greek of simple passages of connected narrative based on the Anabasis. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

7. GERMAN (2 units)

a (1 unit). A thorough knowledge of the principles of German grammar. This includes the conjugation of weak and strong verbs, and of the modal and time auxiliaries; the declension of nouns, pronouns, articles, and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

b (1 unit). Reading and translation of the following texts

or equivalents: Schiller's Maria Stuart, Modern Prose and Poetry.

The work in German composition should be continued through the second year. Harris's German Composition is recommended.

8. FRENCH (2 units)

a (1 unit). The ability to read at sight easy French prose, to translate correctly simple English sentences into French, familiarity with all the common idioms of the language, a thorough and accurate knowledge of the principles of French grammar. Rollins's or Super's French Reader indicates the amount of material to be read. The requirements in grammar involve: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminines of adjectives, the plural of nouns and adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite articles (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work the student may use Chardenal's Complete French Course; later, Fraser and Squair's Grammar is recommended.

b (1 unit). The translation into English of the following texts or their equivalents: Le Voyage de M. Perrichon, by Labiche and Martin; About's Le Roi des Montagnes; Daudet's Le Petit Chose; de Banville's Gringoire; Meilhac and Halévy's L'Ete de Saint Martin; Coppée's Le Luthier de Crémone; Le Tresor.

9. SPANISH (2 units)

a (1 unit). For the first year in Spanish, Ramsey's, Hill's and Ford's, Knapp's, or Garner's Spanish Grammar may be used. Selections from Matzke's Spanish Reader, from Knapp's, or from an equivalent text, are to be read.

b (1 unit). For the second year Galdos's Marianella, Partir a Tiempo, Electra, El Pajaro Verde, and selections from Don Quixote, or equivalent texts, should be read.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry, or Hessler and Smith's Essentials of Chemistry, and an amount of labora-

latter to be read only at sight, represent the nature and amount of preparation required.

b (1 unit). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1–220, with prose composition, or an equivalent.

c (1 unit). Kelsey's Selections from Ovid, and Gayley's Classic Myths. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

(*d*) Vergil (1 unit). Vergil's Æneid, Books I–VI. Emphasis should be laid upon the development of the student's power to understand Latin prose and poetry in the original, and upon the thought of the authors read rather than upon the syntax. The writing in Latin of connected English sentences. In this prose work the emphasis should be laid upon the order of words, the simpler features of sentence structure and means of connecting sentences in paragraphs.

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b (1 unit). Xenophon's Anabasis, Books I–IV, with questions on the forms, syntax, and subject-matter. The translation into Attic Greek of simple passages of connected narrative based on the Anabasis. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

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Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

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b (1 unit). For the second year Galdos's Marianella, Partir a Tiempo, Electra, El Pajaro Verde, and selections from Don Quixote, or equivalent texts, should be read.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry, or Hessler and Smith's Essentials of Chemistry, and an amount of labora-

tory work equivalent to that outlined in the Manuals which accompany these texts, should be completed. Emphasis should be placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY (½ or 1 unit)

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced.

12. BOTANY (1 unit)

One-half unit will be allowed to any high-school student who has an intelligent knowledge of Andrew's Botany All the Year Round, from pages 1 to 233. (American Book Company, San Francisco.)

For one unit the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pages 289 to 293.

13. ZOOLOGY (1 unit)

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's Introduction to Zoology (The MacMillan Company, New York). Merril's Studies in Zoology (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoology at the time of entrance.

14. PHYSIOLOGY (1 unit)

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work. A microscope and prepared slides of human or animal tissues are necessities. Martin's Human Body (Briefer Course), Hewe's High School Physiology, and Macey and Norris's Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The

laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING (½ unit)

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales and cash books, etc., and should include thorough understanding of checks, notes, drafts, billing, and, generally, of all the papers used in modern business.

16. SHOPWORK (1 unit)

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than one unit for such work.

17. DRAWING (½ unit)

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

18. AGRICULTURE (½ or 1 unit)

19. MANUAL TRAINING (½ unit)

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18. AGRICULTURE (½ or 1 unit)

19. MANUAL TRAINING (½ unit)

GENERAL INFORMATION

EXPENSES OF STUDENTS

TUITION—In accordance with legislative enactment no fees are charged for tuition. This applies to students from outside of the State as well as to students from Nevada. There is, however, a diploma fee of five dollars which must be paid at the beginning of the semester in which the degree is conferred.

RAILWAY RATES—The railways of the State are generously cooperating with the Regents of the University by giving reduced rates to students when traveling to and from the University. The Southern Pacific Company, the Nevada Northern, the Las Vegas and Tonopah, the Nevada Central, and the Eureka and Palisade railroads will sell tickets to students at one-half the usual local rate. To obtain the benefits of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

UNIFORMS—The two uniforms with which the members of the Cadet Battalion are required to provide themselves cost about $26. The uniforms may be worn in place of civilian dress. The young women are required to provide themselves with a regulation gymnasium outfit costing about $6. Deposit for key for gymnasium locker for gymnasium suit, 50 cents.

ROOMS—Manzanita Hall is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. The ventilation, heating, lighting and the furnishing of the rooms, are of the very best. Young ladies coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6 feet, to put on mattress; 6 good towels; 2 large aprons for work in shop and in laboratory; personal toilet articles, such as soap, sponges,

comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

Lincoln Hall is the College home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Richard Brown. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow slips, 20 by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

Room rent at the rate of $2 per month, payable in advance for the term, is charged and will be collected at the time of registration.

Rooms in private houses can be rented for $10 to $15 per month.

TABLE BOARD—For the accommodation of the students, the University maintains a dining hall in commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and service are organized with a view to securing board and table service of the most acceptable character, and students living in the dormitories are expected to take their meals there.

The price of board for the coming year will be $16 a month, payable in advance. If the board is not paid until after the 15th of the month an additional charge will be made of 25 cents a day until the account is settled. If the bill is not paid by the last day of the month, the privileges of the dining hall will be denied until the bill has been paid. *No deviation will be made from the above regulations.* After the expenses of the dining hall have been fully met, any surplus is paid over to the Board of Regents to pay for service rendered in maintaining Manzanita and Lincoln Halls.

Table board can be obtained elsewhere at from $25 to $30 per month.

ATHLETIC FEE—A fee of $4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basketball, baseball, and track athletics, and debating. In return for the payment of this fee the student receives free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

LABORATORY FEES—The maintenance of its large and valuable laboratories is a constant and heavy expense to the University. For this reason certain departments have to charge fees to cover special expenses incident to their work. These fees are calculated in amount to cover the cost of the materials used and the expense incurred by the individual students; hence the amount of the fee varies in the different laboratories ranging from one to ten dollars per semester.

LABORATORY DEPOSITS—Deposits are required to cover costs of breakage in laboratory courses where breakages are liable to occur. These deposits are payable at the beginning of each semester. At the end of the semester deduction is made for actual breakage and the balance of the deposit is refunded to the student upon order from the head of the department.

If a student takes two or more courses in any one department where a fee is required the fee for each course must be paid; but one deposit only is required under the same conditions.

The fees and deposits charged each semester in the different courses are as follows:

FEES AND DEPOSITS, 1912–1913	*Fees*	*Deposits*
Chemistry, Courses 2, 4, 5, 6, 23, 28, 30, 40, 45, 60, each	$2.50	$5.00
Geology, Course 23b		5.00
Mineralogy, Courses 1a and 1b, each	2.50	
Mineralogy, Course 25		5.00
Mining and Metallurgy, Course 30	10.00	
Mining and Metallurgy, Course 32, First semester	5.00	
Second semester	7.50	
Civil Engineering, Courses 21, 25, 35, each		5.00
Mechanic Arts, Courses 1, 2, 3, 4, each	2.00	
Physics, Courses 1, 24, 40	1.00	5.00
Physics, Courses 3, 21, each	2.00	5.00
Zoology, Courses 1, 10, each	1.00	2.00
Zoology, Courses 2, 23, 24, 40, each	2.00	2.00

Hygiene, Courses 1, 22, 23, each	$2.00	$2.00
Botany, Courses 1, 2, 3, each	1.00	2.00
Botany, Course 25	2.00	2.00
Horticulture, Course 1	2.00	
Cooking	1.00	
Sewing	1.00	
Typewriting	1.00	
History Syllabus (according to work being done)	.50 to $1.00	

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES

	Low	*Moderate*	*Liberal*
Tuition	None	None	None
Board, 36 weeks	$144	$144	$250
Room, light and fuel	18	18	72
Washing and sundries	20	30	40
Text-books and stationery	6	12	18
Laboratory and athletic fees	10	15	17
Totals	$198	$219	$397

AID TO STUDENTS

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework, and dining-hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

A few annual scholarships have been given for the purpose of assisting deserving students. These have been described in detail on pages 67–69.

MATRICULATION

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants

for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credential or examination he is given an admission card by the Registrar. This card must be presented to the Librarian before any books can be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION

METHOD OF REGISTERING

1. On registration day the student secures from the Registrar a student registration blank, upon which his studies for the semester are to be entered and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major and minor professors as advisers.

4. The signature of each instructor must be obtained for the courses registered in before the card is deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration, stamped by the Comptroller. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

CLASSIFICATION OF STUDENTS

In registering, a student shall give his status as *Regular*, *Limited*, *Partial*, or *Special*, according to the rules following:

1. For "Regular" Freshman standing, a student must be accredited in all the required Preparatory work; or his entrance deficiencies must not exceed one high-school unit, and such deficiencies must be made good by the end of the Sophomore year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having two units of entrance deficiencies may register as a "Limited" Freshman, but these deficiencies must take precedence over all other work registered for. Unless a student is taking a majority of his work in the University, he shall be classed as a Sub-Freshman student.

4. A "Limited" Sophomore, Junior or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and departmental permission.

7. For the benefit of those students who have not attained entrance rank in the University, the University maintains a Sub-Freshman year in which students can enter who are deficient in two units or less.

ENROLLMENT

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical culture. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the Committee on Registration and of the department concerned.

3. All courses finally enrolled in shall be completed. In case a course is elective, however, with the permission of the Registration Committee and the department concerned, a student may drop the course any time during the first twelve weeks of the semester, and the course will be canceled from his record.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

CONDITIONS AND FAILURES

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registrar's office and may subject the student to admonition, suspension, or dismissal. A student whose work is unsatisfactory may be placed on probation, and may be required to withdraw at any time thereafter if satisfactory improvement is not shown. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time, should obtain leave of absence from the Committee on Delinquent Scholarship.

Each instructor will determine the final grade of students by any method that he may consider best adapted to his courses.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department.

3. Only one reexamination may be given for the removal of any condition. The regular time for such reexamination shall be the beginning of the college year.

4. Any condition not removed by the time the course is next repeated becomes a failure and is subject to the rules for failures; but, in case of special students, the Committee on Registration may grant exemption from this rule.

5. Any student who receives a final grade of 50 or less shall

NOTE—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the condition within the prescribed time shall be considered as having failed.

6. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Academic Council shall by vote permit an extension of time or the substitution of another course.

7. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration Committee.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of their respective Colleges or Schools, and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

GRADUATION

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school or college are required. Credit is given for work done in other institutions of similar rank and character.

To students with an average of 90 per cent, or over, in all of the work required for graduation the degree "With Honor" will be given.

THESIS REQUIREMENTS

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific and literary knowledge and good arrangement and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the Committee on Graduation and Theses not later than the first Monday in November, and all theses should be completed and presented to the Committee on Theses on or before the first day of the final examinations in May.

The thesis should be typewritten upon 8½x11 paper and bound in a 9x11¼ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS
SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE IN CANDIDACY FOR THE DEGREE OF BACHELOR OF ARTS

(Department of History)

By
JOHN EDWARD SMITH
Reno, Nevada
1912

DIPLOMAS AND BACCALAUREATE DEGREES

1. The Degree of Bachelor of Arts is conferred upon students who have completed in a satisfactory manner the four years' work of the College of Arts and Science.

2. The Degree of Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the College of Agriculture, the College of Engineering, or the College of Education.

3. A Diploma entitling the holder to a State Teacher's Certificate of High-School Grade, is awarded to students who have

completed in a satisfactory manner the four years' work of the College of Education.

4. A Diploma entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded to students who have completed in a satisfactory manner the work of the Junior College of Education.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Courses the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Courses.

A thesis will constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing, but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Courses may appoint. In case semester examinations are taken, the grade received will be averaged with the oral examination and the

thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

DEGREES OF MINING, MECHANICAL, ELECTRICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Electrical Engineer or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Courses and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

The diploma fee for the Master's Degree, or for advanced degree in Engineering is five dollars. (See under Expenses.)

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

COLLEGE OF ARTS AND SCIENCE

FACULTY

JOSEPH EDWARD STUBBS.....President

ROBERT LEWERS.....Vice-President, Professor of Elementary and International Law and Commercial Subjects

JAMES EDWARD CHURCH, JR.....Professor of the Latin Language and Literature

LAURA DE LAGUNA.....Professor of the Romanic Languages and Literatures

JEANNE ELIZABETH WIER.....Professor of History and Political Science

PETER FRANDSEN.....Professor of Biology

PATRICK BEVERIDGE KENNEDY.....Professor of Botany, Horticulture and Forestry

ROMANZO ADAMS.....Professor of Economics and Sociology

W. S. TANGIER SMITH[1].....Professor of Geology and Mineralogy

MAXWELL ADAMS.....Professor of Chemistry

HERBERT WYNFORD HILL.....Professor of the English Language and Literature

LOWE ABEEL MCCLURE[2].....Professor of Military Science and Tactics and Instructor in Physical Training for Men

LEON WILSON HARTMAN.....Professor of Physics

CARL ALFRED JACOBSON[3].....Professor of Agricultural Chemistry

CHARLES HASEMAN.....Professor of Mathematics and Mechanics

JOHN CALVIN WATSON.....Professor of the Greek Language and Literature

GEORGE OEDAHL.....Professor of Education and Psychology

HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics

REUBEN CYRIL THOMPSON.....Associate Professor of Latin and Greek Languages and Literatures

KATE BARDENWERPER.....Assistant Professor in Domestic Science

SANFORD CROSBY DINSMORE.....Assistant Professor of Agricultural Chemistry

KATHERINE LEWERS.....Assistant Professor of Drawing

J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy

GUSTAVUS SWIFT PAINE.....Instructor in English

HELEN ANN MEIGHAN.....Instructor in Physical Education for Women

EDWARD R. VON JANINSKI.....Instructor in German

GRACE ALICE DAY.....Supervisor of Training

MABEL A. JONES.....Instructor in Vocal Music

CHARLES LEROY BROWN.....Assistant in Biology

WALTER WILLIAMS ANDERSON.....Assistant in Chemistry

AUGUST HOLMES.....Student Assistant in Mathematics

[1]Absent on leave, 1912-13. [2]Detail expires, May 31, 1912. [3]Absent on leave, 1911-13.

AIM

The aim of the College of Arts and Science is twofold:

1. To lay a foundation for the professions, both learned and technical, and

2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

CONDITIONS OF ADMISSION

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1. English (a)	1
English (b)	1
English (c)	1
English (d)	1

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to the College of Arts and Science, the candidates must present English a and b; Mathematics a and b; and 11 additional units which may be distributed according to the major division selected in the Junior College Course. The specific requirements of the individual divisions are as follows:

Division I—Latin, 4 units; elective, 7 units.

Division II—Language other than English, 2 units; History, 2 units; elective, 7 units.

Division III—Mathematics c; Language other than English, 2 units; Science, 1 unit; elective, 7 units.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of their respective Colleges or Schools, and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE

The Degree of Bachelor of Arts is conferred upon students in the College of Arts and Science who have satisfactorily completed, in addition to the requirements of Military Science or Physical Education for Women, work aggregating 120 semester-units credits.[1] This work is divided into Junior College and Senior College requirements.

JUNIOR COLLEGE REQUIREMENTS

The Junior College requirements, which represent the requirements of the Freshman and Sophomore years, are as follows: English 1 (6 units), and in addition 12 units from one of the following main divisions, which shall be known as the student's major division, and 6 units from each of the others. However, the specific entrance requirements imposed for the division in which the 12 units are elected must be met.

Division I	Division II	Division III
Latin	History	Mathematics
Greek	Sociology	Zoology
German	Economics	Botany
French	Political Science	Hygiene
Spanish	Psychology	Geology
English Language	English Literature	Chemistry
		Physics

Furthermore, two subjects begun in the Freshman year and distributed in two of the main divisions must be continued through the Sophomore year.

The remaining units necessary to make a total of sixty may be chosen freely from the departments included in the College

[1] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

of Arts and Science. To students completing this work will be given the Junior Certificate and the title of Associate.

TABLE OF JUNIOR COLLEGE REQUIREMENTS

The following table presents the Junior College requirements in graphic form:

DIVISION I	DIVISION II	DIVISION III
CONTENTS OF DIVISIONS		
Latin	History	Mathematics
Greek	Sociology	Zoology
German	Economics	Botany
French	Political Science	Hygiene
Spanish	Psychology	Geology
English Language	English Literature	Chemistry
		Physics
ENTRANCE REQUIREMENTS		
English a and b	English a and b	English a and b
Mathematics a and b	Mathematics a and b	Mathematics a, b, and c
Latin, 4 units[1]	Language other than English, 2 units	Language other than English, 2 units
	History, 2 units	Science, 1 unit
Elective, 7 units	Elective, 7 units	Elective, 7 units
JUNIOR COLLEGE REQUIREMENTS		
12 units from Division I	12 units from Division II	12 units from Division III
6 units each from Division II and III	6 units each from Divisions I and III	6 units each from Divisions I and II
Military Science (required of men)	Military Science (required of men)	Military Science (required of men)
Physical Education (required of women)	Physical Education (required of women)	Physical Education (required of women)
English 1, 6 units	English 1, 6 units	English 1, 6 units
Elective, 30 units	Elective, 30 units	Elective, 30 units

SENIOR COLLEGE REQUIREMENTS

The Senior College requirements, which represent the requirements of the Junior and Senior years, include a group and free electives in character as follows:

GROUP

The group must embrace two departments and must consist of courses aggregating not fewer than twenty-four nor more than thirty-six units of Senior College work. This group need not necessarily lie within the division selected as the major division in fulfilling the Junior College requirements. Of these courses not fewer than twelve nor more than twenty-four units must be in one department.

[1]Pending revision of the entrance requirements, three years of Latin, with one year of French or Spanish, will be accepted from students who wish to take courses in the latter subjects.

The combined work of the two departments should represent a unity of aim. The particular grouping, however, will depend upon the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
Language—Literature Group	*Social Science Group*
Greek, Latin, French, German, English.	History, Law, Economics, Sociology.
3	4
Biological Science Group	*Physical Science Group*
Zoology, Botany, Chemistry, Geology.	Chemistry, Physics, Mathematics, Geology, Mineralogy.

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to elect a considerable amount of history also. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a Science major will often find it profitable to have a good reading knowledge of French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Advisory Committee, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

FREE ELECTIVES

The remaining units necessary to make a total of sixty may be freely elected from any courses offered in the College of Arts and Science, and from the following additional subjects: Agriculture, Horticulture, Veterinary Science, Metallurgy, Assaying, Agricultural Chemistry, and Surveying, provided that the requirements of the departments in which the work is selected are satisfied.

It is advisable that students should plan their work for the Junior and Senior years as early as the beginning of the

Sophomore year, in order that the studies elected then may fit in with their later work.

THESES

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED COURSE IN EDUCATION

Students in the College of Arts and Science may be registered in the College of Education, Advanced Course, during their Junior and Senior years by electing courses in Education aggregating ten hours.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application, including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Courses the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College Courses, four units counting as three, or, where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Courses.

A thesis shall constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Committee on Graduate Courses for final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing; but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Courses may appoint. In case semester examinations are taken the grade received will be averaged with the oral examinations and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree or Bachelor of Science or the Degree of Bachelor of Arts in science groups.

COURSES OF INSTRUCTION

I. Greek
II. Latin
III. French
IV. Spanish
V. German
VI. English
VII. Music
VIII. Art
IX. History and Political Science
X. Law
XI. Economics and Sociology
XII. Commercial Subjects
XIII. Education
XIV. Psychology
XV. Zoology
XVI. Hygiene
XVII. Botany
XXV. Domestic Science
XXVI. Geology
XXVII. Mineralogy
XXVIII. Chemistry
XXIX. Physics
XXXI. Mathematics
XXXVIII. Military Science and Tactics
XL. Physical Education for Women

I. GREEK LANGUAGE AND LITERATURE

PROFESSOR WATSON, ASSOCIATE PROFESSOR THOMPSON

Junior College Courses

1. ELEMENTARY. Grammar and exercises. An introductory course designed for those students who wish by somewhat concentrated effort to acquire in one year the ability to read ordinary Attic prose. *First semester. Hours to be arranged. Five credits.* 202 Morrill Hall. Professor Watson.

2. ELEMENTARY (continued). Grammar, exercises, and Xenophon's Anabasis, Books I–IV. Open to those who have taken Greek 1, or its equivalent. The successful completion of both courses will admit students to Greek 3. *Second semester. Hours to be arranged. Five credits.* 202 Morrill Hall. Professor Watson.

3. PLATO AND LYSIAS. Plato's Apology and Crito, and selected orations of Lysias. Open to those who have had Greek 1 and 2, and to those who have satisfied the entrance

requirements in Greek. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

4. HOMER. Introduction to the grammar and prosody of Homer, and to the Ionic dialect, with reading of the Iliad, Books I–VI. *Second semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

5. GREEK PROSE COMPOSITION (first course). A systematic study of Greek grammar, and the writing of sentences and simple connected narrative. Required of all Greek majors, and open to those taking Greek 3 and 4, and to those who have not already had Greek Composition and are pursuing any of the more advanced courses. *Both semesters. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Watson.

6. THUCYDIDES. ELEGIAC, IAMBIC, AND LYRIC POETS. Reading of Book I of Thucydides, followed by selections from the Elegiac, Iambic, and Lyric Poets. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

7. EURIPIDES AND SOPHOCLES. Introduction to Greek Tragedy, with reading of the Medea of Euripides and the Œdipus Tyrannus of Sophocles, and with some attention to their structure and meters. *Second semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

8. GREEK PROSE COMPOSITION (second course). The writing of connected passages based upon authors already read, with special attention to the Greek verb. Open only to those who have taken Group 4 or its equivalent. *Both semesters. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Watson.

Senior College Courses

21. GREEK LITERATURE—THUCYDIDES. The Sicilian Expedition, Books VI and VII, with some study of the historical and political aspects of the campaign. *First semester. Hours to be arranged. Three credits.* Professor Watson.

22. GREEK LITERATURE—HOMER. Rapid reading of the greater part of the Iliad, with some attention to Homeric problems. *Second semester. Hours to be arranged. Three credits.* Professor Watson.

23. GREEK LITERATURE—DEMOSTHENES. Reading of the Oration on the Crown as a masterpiece of eloquence and with

special reference to Demosthenes as an orator and statesman. *First semester. Hours to be arranged. Two credits.* Professor Watson.

24. GREEK LITERATURE—THE PASTORAL. Selections from Theocritus, Bion, and Moschus, with a study of the influence of these writers in the history of Pastoral poetry. *Second semester. Hours to be arranged. Two credits.* Professor Watson.

25. GREEK LITERATURE—PLATO. Reading of the greater portion of the Republic of Plato, with a brief study of the History of Ancient Philosophy. *First semester. Hours to be arranged. Three credits.* Professor Watson.

26. GREEK LITERATURE—TRAGEDY. Reading of the Antigone of Sophocles, and the Prometheus Bound and the Agamemnon of Æschylus. Studies in the development of Tragedy, and in the dramatic construction and presentation of the plays read. *Second semester. Hours to be arranged. Three credits.* Professor Watson.

27. GREEK LITERATURE—HERODOTUS. The Persian Wars, Books VI–IX, with due attention to their historical and military aspects. *First semester. Hours to be arranged. Two credits.* Associate Professor Thompson.

28. GREEK LITERATURE—HOMER. Rapid reading of large portions of the Odyssey, with study of the literary influence of the Homeric Epics. *First semester. Hours to be arranged. Two credits.* Associate Professor Thompson.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged. Two credits.* Professor Watson.

Courses 21, 22, 23, and 24 will be given in 1913–14 and in alternate years; Courses 25, 26, 27, and 28 in 1912–13 and in alternate years.

II. LATIN LANGUAGE AND LITERATURE

PROFESSOR CHURCH, PROFESSOR WATSON, ASSOCIATE PROFESSOR THOMPSON

LATIN D. VERGIL. This course is intended for such students as present only three years of Latin at entrance, but wish to continue the study in the College. *Both semesters. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

NOTE—A course in Cicero will be organized for students who present only two years of Latin, if a sufficient number apply for it.

Junior College Courses

1. CICERO. The De Senectute and Cicero's Letters. *First semester, 10–11, M. W. F. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

2. HORACE AND CATULLUS. Latin Lyric Poetry. *Second semester, 10–11, M. W. F. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

3. LATIN PROSE COMPOSITION. Required of all students who have elected Latin as their major department or who seek recommendation as teachers of Latin. *Both semesters. Hours to be arranged. Two credits.* 205 Stewart Hall. Associate Professor Thompson.

4. PLAUTUS AND TERENCE. The Mostellaria of Plautus, the Phormio of Terence; Comparative Classical Comedy; some study will also be made of vernacular Latin and English derivatives. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

5. VERGIL. Æneid VII–XII, with the study of the Classical Epic. *Second semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

6. LATIN PROSE COMPOSITION (second course). Designed particularly for teachers and for candidates for Rhodes Scholarships. *Both semesters. Hours and credits to be arranged.* 202 Morrill Hall. Professor Watson.

7. ROMAN AND PRIVATE LIFE, and its Evidences in Modern Italian Customs. Illustrated. *Second semester. Hours to be arranged. Two credits.* 203 Morrill Hall. Professor Church.

Senior College Courses

21. COMPARATIVE PASTORAL POETRY. Theocritus to Mantuan. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Church.

22. ROMAN BURIAL INSCRIPTIONS, PROSE AND METRICAL. The study of the essential features of Roman religion and the rise of Christianity. *First semester. Hours to be arranged. One credit.* (*Omitted 1912–1913.*) Professor Church.

23. LIVY XXI–XXII. The War with Hannibal. *Second semester. Hours to be arranged. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

24. THE ROMAN NOVEL. Petronius and Apuleius. *First semester. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Church.

25. GREEK AND ROMAN ART AND ARCHÆOLOGY. Illustrated by lantern slides and reproductions. *First semester. Hours to be arranged. Two credits.* 202–203 Morrill Hall. Professor Church.

26. PATRISTIC AND LATE LATIN; CHURCH HYMNS. *Second semester. Hours to be arranged. Two credits.* 206 Morrill Hall. Professor Church.

27. THE LATIN LANGUAGE. Its broader principles and relation to the Romanic languages. *Second semester. Hours to be arranged. One credit.* 202 Morrill Hall. Professor Church and Associate Professor Thompson.

28. TEACHERS' COURSE. Methods and ideals in teaching Latin; practice teaching. *Both semesters. Hours to be arranged. Two credits.* 205 Stewart Hall and Library. Associate Professor Thompson.

29. ROMAN SATIRE. JUVENAL. *First semester. Hours to be arranged. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged. Two credits.* Library. Professor Church and Associate Professor Thompson.

Graduate Courses

41. TACITUS. Annals. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Church.

42. ANCIENT CLASSICAL MYTHOLOGY. Its religious and literary forms. *Second semester. Hours to be arranged. One credit.* 202 Morrill Hall. Professor Church.

60. SEMINAR FOR GRADUATES. The Study of the Winds in Classical Poetry from Homer to Ovid. *Both semesters. Three credits.* Library. Professor Church and Professor Watson.

III. FRENCH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Junior College Courses

1. BEGINNING FRENCH. Drill in grammar and in translating simple English into French, and French into English. *Both semesters, 8–9, M. W. F. Six credits.* 104 Stewart Hall. Professor de Laguna.

2. SECOND-YEAR FRENCH. Translation of such texts as Daudet's Selected Stories, Dumas's Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoleon, Extraits de Memoires et d'Histoires, and

Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9–10, M. W. F. Six credits.* 104 Stewart Hall. Professor de Laguna.

Senior College Courses

23. THE FRENCH DRAMATISTS. Selected plays of Moliere, Racine and Corneille, Hugo's Hernani, Rostand's Chantecler and La Princesse Lointaine. A synopsis or critique of each play read is required. Advanced prose composition. *Both semesters. Hours to be arranged. Four credits.* 104 Stewart Hall. Professor de Laguna. (Not given 1912–13.)

24. MODERN FRENCH. Poetry and prose, advanced prose composition. Essays in French on the works studied are required. *Prerequisite:* French 1 and 2. *Both semesters. Hours and credits to be arranged. M. W. F.* 104 Stewart Hall. Professor de Laguna.

25. RAPID READING. History of French Literature. *Prerequisite:* French 1 and 2. *Both semesters. Hours and credits to be arranged.* 104 Stewart Hall. Professor de Laguna.

26. ADVANCED PROSE COMPOSITION. Arranged to accompany French 23 and 24. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. Two credits.* 104 Stewart Hall. Professor de Laguna.

40. SEMINAR FOR UNDERGRADUATES. Old French; grammar, phonetics, morphology, syntax. Reading: Chanson de Roland, Chretien de Troyes, Chevalier au Lion. *Both semesters. Hours to be arranged. Two credits.* 104 Stewart Hall. Professor de Laguna.

IV. SPANISH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Junior and Senior College Courses

21. BEGINNING SPANISH. The course in Spanish has been laid out for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from text-book work is devoted to Spanish conversation. *Prerequisite:* Two years of Latin and two of French, or an equivalent. *Both semesters. Hours to be arranged. Four credits.* 104 Stewart Hall. Professor de Laguna.

22. ADVANCED SPANISH. Modern Spanish novels and plays by standard authors. Selections from Le Sage's Gil Blas and

Cervantes's Don Quixote. *Prerequisite:* Spanish 21. *Both semesters. Hours to be arranged. T. Th. Four credits.* 104 Stewart Hall. Professor de Laguna.

V. GERMAN LANGUAGE AND LITERATURE

MR. VON JANINSKI

Junior College Courses

1. ELEMENTARY GERMAN. Pronunciation, accidence, and rules of syntax, with reading of prose and translation of short sentences into German. The basis for the study of grammar is Thomas's Practical German Grammar. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski.

2. NARRATIVE PROSE. Reading of selected narrative prose. Study of word formation, syntax, memorizing of idioms, and the translation of easy English prose into German. Such authors as Wildbrandt, Eichendorf and Gerstäcker will be read. *Prerequisite:* German 1, or two years of high-school German. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski.

3. AN INTRODUCTION TO THE CLASSICS. Study of the lives of Lessing, Schiller, and Gœthe. Reading of representative works. Composition based on text read. *Prerequisite*: Same as for German 2. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski. (To be given in 1913–14.)

10. SCIENTIFIC GERMAN. Reading of scientific prose. Composition and exercises. *Prerequisite:* German 1, or two years of high-school German. *Both semesters. Four credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski.

Senior College Courses

22. THE GERMAN NOVEL. Criticisms and themes. Such authors as Riehl, Freytag, Fulda and Hauff will be read. *Prerequisite:* German 2 or 3, or three years of high-school German. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski.

23. HISTORY OF GERMAN LITERATURE. Collateral reading. Exercises and themes. *Prerequisite:* Same as for German 22. (Given 1913–14.) 5 Morrill Hall. Mr. von Janinski.

24. HISTORY OF XIX CENTURY DRAMA. Study of Witowski's work and a consideration of Freytag's "Technique of the Drama." Collateral reading. Such authors as von Kleist,

Hebbel, Wagner and Sudermann, will be read. *Prerequisite:* German 22 or 23, or four years of high-school German. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski.

25. GERMAN POETRY. Study of the lyrics and ballads. Reading of important poems of such authors as Schiller, Scheffel and Hauptman. *Prerequisite:* German 22 or 23. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski. (Given in 1913–14.)

40. STUDY AND INTERPRETATION OF GŒTHE'S FAUST. Exercises and themes. This course is primarily for those majoring in German. It may be taken in addition to German 24 or 25, but cannot be substituted for either of them. *Both semesters. Four credits. Hours to be arranged.* 5 Morrill Hall. Mr. von Janinski.

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Junior College Courses

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, M. W. F. Section 1, 9–10, Section 2, 10–11. Six credits.* 102 Stewart Hall. Mr. Paine.

2*a*. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. *Prerequisite:* English 1. *First semester. Hours to be arranged. Two credits.* 102 Stewart Hall. Mr. Paine.

2*b*. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisite:* English 1 and 2*a*. *Second semester. Hours to be arranged. Two credits.* 102 Stewart Hall. Mr. Paine.

3. ARGUMENTATION. The preparation of briefs and the presentation of arguments. *Both semesters. Hours to be arranged. Four credits.* 102 Stewart Hall. Mr. Paine.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, 9–10, M. W. F. Six credits.* Mackay Mining Building. Professor Hill.

Senior College Courses

ENGLISH LANGUAGE

27. CHAUCER. The Canterbury Tales. *Prerequisite:* English 1 and 4. *Three credits.* (This course alternates with 29.) *Not given 1912–13.* Professor Hill.

29. OLD ENGLISH. Grammar and reading of simple prose and verse. *Prerequisite:* English 1 and 4. *First semester, 2–3, M. W. F. Three credits.* Professor Hill.

30. BEOWULF. *Prerequisite:* English 1, 4, and 29. *Second semester, 2–3, M. W. F. Three credits.* Professor Hill.

ENGLISH LITERATURE

25. LITERATURE OF THE NINETEENTH CENTURY. (1) General survey of the period. (2) Tennyson and Browning. *Prerequisite:* English 1 and 4. *Both semesters, 10–11, M. W. F. Six credits.* Professor Hill.

26. SHAKESPEARE. The interpretation of six plays. *Prerequisite:* English 1 and 4. (This course alternates with 25). *Not given 1912–13. Six credits.* Professor Hill.

28. MILTON. Minor Poems and Paradise Lost. *Prerequisite:* English 1 and 4. *Three credits.* (This course alternates with 30.) *Not given 1912–13.* Professor Hill.

31. THE MODERN DRAMA. Ibsen, Maeterlinck, Pinero, Shaw. *Four credits.* (This course alternates with 32). *Not given 1912–13.* Professor Hill.

32. THE NOVEL. A rapid survey of the history and development of the novel, followed by a more thorough study of the Nineteenth Century novels. *Both semesters, 10–11, T. Th. Four credits.* Professor Hill.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged with individual students. Two credits.* Library. Professor Hill.

VII. MUSIC

MISS JONES

Junior College Courses

1. PUBLIC SCHOOL MUSIC. Sight singing, ear training, rhythm study, part singing, elementary vocal instruction. *Hours and credits to be arranged.* 206 Morrill Hall. Miss Jones.

2. PUBLIC SCHOOL MUSIC. Talks on child voice; study of plans and songs used in all grades of some of the best schools. Vocal instruction continued. *Hours and credits to be arranged.* 206 Morrill Hall. Miss Jones.

3. VOCAL INSTRUCTION. Voice training, breath control,

enunciation, and study of songs of all grades. *Hours and credits to be arranged.* 206 Morrill Hall. Miss Jones.

4. UNIVERSITY CHORUS. Singing and interpretation, including correct phrasing, diction and the principles of voice production. Study of some high-class choral work or part songs to be given during the year with orchestral accompaniment. *Hours to be arranged.* Miss Jones.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Junior College Courses

1. ART. Drawing: Antique life and still life. Painting: From nature in oils and water colors. Ornaments: Historic ornament and conventionalization. Clay modeling. *Hours and credits to be arranged.* Physics Building. Miss Lewers.

For description of other courses in Art, see College of Education.

IX. HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER

Junior College Courses

1. MEDIEVAL EUROPE. A general survey of the history of Western Europe from the Barbarian Invasions through the Renaissance. *Both semesters. 9–10, M. W. F. Six credits.* 203 Morrill Hall. Professor Wier.

2. MODERN EUROPE, 1500–1900. A general course with emphasis upon the change from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. *Open to students who have had Course 1 or a satisfactory equivalent. Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

3. WOMAN IN HISTORY. A study of the position and influence of woman in various ages and among different nations will be followed by lectures upon the vocations now open to women and the significance of college education in preparation for the same. Lectures on various vocations will be given by representatives of these vocations and professions. Especially designed with reference to the needs of Freshman women, but open to all women students. *Both semesters, M. Two credits.* 203 Morrill Hall. Professor Wier.

Senior College Courses

23. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for

the study of law. (Given 1912–13 if a sufficient number of students desire it.) *Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

25. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES, 1775–1840. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. (Not given 1912–1913). *Both semesters. Six credits.* 203 Morrill Hall. Professor Wier.

26. WESTWARD EXPANSION OF THE UNITED STATES. A study of the westward movement from the Atlantic to the Pacific and of the continuous influence of the West upon national and international affairs. Particular attention will be given to political, economic, and social aspects of the occupation of the various sections. *Open to all students who give evidence of satisfactory knowledge of American history. Both semesters, 9, T. Th. Four credits.* 203 Morrill Hall. Professor Wier.

27. HISTORY OF NEVADA. Lectures on the political and constitutional history of the State. *Free elective for all students. Both semesters. Two credits.* 203 Morrill Hall. Professor Weir. (Not given 1912–1913.)

29. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoints rather than as a French local crisis. *Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

30. HISTORY OF THE PACIFIC SLOPE. *Complementary to Course 26. Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

31. PRINCIPLES AND PRACTICE OF POLITICS. *Intended primarily for Senior College students, but open to Junior College students with permission of the instructor. Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

33. RESEARCH COURSE IN POLITICAL SCIENCE. Thesis course for students who may wish to contest for the Philo C. Bennett prize on "The Principles of Free Government." The subject for 1912–13 will be "Centralization in State Government as applied to Nevada." *Open to Junior College students by permission. Both semesters. Two credits.* 203 Morrill Hall. Professor Wier.

40. HISTORY SEMINAR. *Both semesters. Hours to be arranged. Two credits.* 203 Morrill Hall. Professor Wier.

Fee for History Syllabus, 50 cents to $1 per semester, according to work being done.

X. LAW

PROFESSOR LEWERS

Senior College Courses

21. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester. Hours to be arranged. M. W. F. Three credits.* 301 Morrill Hall. Professor Lewers.

22. INTERNATIONAL LAW. The principles of international law as set forth by the leading text-writers of America, England, and the Continent. *Second semester. Hours to be arranged. M. W. F. Three credits.* 301 Morrill Hall. Professor Lewers.

23. ADVANCED LAW. The object of this course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisite:* Law 21 and 22. *Both semesters. Hours to be arranged. M. W. F. Six credits.* 301 Morrill Hall. Professor Lewers.

XI. ECONOMICS AND SOCIOLOGY

PROFESSOR ADAMS

NOTE—On account of the fact that Economics and Sociology are taken by different classes of students it seems best not to designate some courses as strictly Junior College Courses and others as Senior College Courses. In the case of students who desire but a year or two of work in these subjects it is ordinarily better to postpone such work to the Senior College. Students desiring to make Economics and Sociology their major subject should begin the work in their first year in college. Students who plan to choose history or law as a major study might find it advantageous to begin the work in Economics at an early period in this course.

Junior and Senior College Courses

1. ECONOMIC HISTORY. An introductory study of the evolution of English and American industry, agriculture, manufacturing and commerce. *First semester. Hours to be arranged. Two credits.* 108 Morrill Hall. Professor Adams.

2. ECONOMIC GEOGRAPHY. A study of geographic conditions in relation to economic development followed by a special study of the economic situation in several important and typical countries, United States, England, Germany, Russia, Mexico, China, and Brazil. *Second semester. Hours to be arranged. Two credits.* 108 Morrill Hall. Professor Adams.

3. PRINCIPLES OF ECONOMICS. Lectures and Text. *Both semesters. Hours to be arranged. Six credits.* 108 Morrill Hall. (*Not given 1912–13.*) Professor Adams.

4. RURAL ECONOMICS. A study of the economic and social aspects of farm life. *First semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Adams.

5. PUBLIC FINANCE. Public expenditures, financial administration, taxation, public debts. *First semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Adams.

6. MONEY AND BANKING. History and principles. *Second semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Adams.

7. INTRODUCTION TO THE STUDY OF SOCIETY. The social nature of man. The nature of society. Social institutions. *First semester. Three credits. Not open to Freshmen.* (*Not given 1912–13.*) 108 Morrill Hall. Professor Adams.

8. DELINQUENTS, DEPENDENTS, AND DEFECTIVES. A study of the causes and social treatment of crime and pauperism and of the defective classes. *Second semester.* (*Not given 1912–13*). 108 Morrill Hall. Professor Adams.

9. AMERICAN CITIES. Economic and social aspects. *Second semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Adams.

21. SOCIAL ORGANIZATION. A study of types of social organization in relation to human nature, to modes of communication and stages of social evolution. *First semester. Three credits.* (*Not given 1912–13*). 108 Morrill Hall. Professor Adams.

23. THE STATE IN RELATION TO INDUSTRY. The subject is studied historically and in relation to present problems. *First semester. Hours to be arranged. Two credits.* (*Not given 1912–13.*) 108 Morrill Hall. Professor Adams.

25. HISTORY OF ECONOMIC THOUGHT. A critical review of the leading schools of economic thought since the Sixteenth Century. *Second semester. Hours to be arranged. Two credits.* (*Not given 1912–13.*) 108 Morrill Hall. Professor Adams.

40. RESEARCH COURSE. A study of a selected subject—ordinarily an investigation of some economic or sociological question of importance to Nevada. *Both semesters. Hours to be arranged. Credit according to work.* 108 Morrill Hall. Professor Adams.

XII. COMMERCIAL SUBJECTS

PROFESSOR LEWERS

Junior College Courses

1. BOOKKEEPING. The work of the first year embraces the fundamental principles of double and single entry, and includes making out business papers of all kinds. The work of the second term includes the voucher system as outlined in the Marshall-Goodyear system. *4 hours laboratory.* 301 Morrill Hall.

2. BOOKKEEPING. The second-year work embraces specialties in higher accounting, and includes banking, real estate and insurance, corporation, manufacturing and various other modern sets of bookkeeping. Attention is given to modern labor-saving systems, and every effort is made to give the student a comprehensive idea of present-day accounting. The department is equipped with an up-to-date Burroughs adding machine, and each student is given enough work to acquire facility in using the machine. *4 hours laboratory.* 301 Morrill Hall.

3. TYPEWRITING. This work begins with the exercises outlined in modern touch systems, and as soon as a working knowledge of the keyboard is acquired the student is given work in copying letters, business papers, legal documents and other suitable practice intended to qualify him for rapid and accurate work. The department is equipped with visible Underwoods and Remingtons. *4 hours.* 301 Morrill Hall. Fee, $1 per semester.

4. STENOGRAPHY. The first year's work is designed to ground the student thoroughly in the principles of the art. *Dement:* Pitmanic Shorthand. *Hours to be arranged.* 301 Morrill Hall.

5. STENOGRAPHY. The second year's work is in the nature of laboratory work, and includes dictation in typewriting as well as in stenography. Painstaking attention will be given to spelling and English composition. A good commercial speed is required, but the student will be advanced in this respect as far as circumstances will permit. Stenographers are in great demand, but they must be capable to hold positions. *Hours to be arranged.* 301 Morrill Hall.

6. OFFICE WORK. This course is designed to give a student a year's training in office work, and embraces dictation and transcribing letters and legal papers, lectures on office methods and devices and the practical application of these principles

in numerous exercises. The method of keeping books on the typewriting machines is fully exemplified, and in general the course is so worked out that the student is given a good knowledge of a well-equipped modern office and its works. *4 hours laboratory.* 301 Morrill Hall.

XIII. EDUCATION

PROFESSOR ORDAHL, MISS DAY

Junior College Courses

1. SCIENCE OF EDUCATION. This course is designed to give the background and scientific basis for practice work in Course 3 in Education. The first semester is devoted to the study of elementary principles of psychology in relation to education. In the second semester a more detailed study is made of the learning process. *Both semesters. 10–11, M. W. F.* 101 Stewart Hall. Professor Ordahl, Miss Day.

3. THEORY AND PRACTICE OF TEACHING. Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussion, and private conferences.

(*a*) One hour daily throughout the year is devoted to practice teaching by every student. This includes four units of work, for periods of seven weeks each, in the following subjects: Elementary school English, geography, history, arithmetic. Additional subjects may be arranged if desired. Carefully prepared general and daily lesson plans are submitted to the supervisor and regular grade teacher by the student-teacher before taking charge of a class. After each lesson the student-teacher meets the supervisor in private conference for criticism and suggestions.

(*b*) Two hours each week are spent by the class with the supervisor, observing lessons taught by the city teachers in the various elementary school subjects. These are made the basis of class discussions upon principles and methods of teaching.

(*c*) Three hours each week are devoted to the study of school problems, principles of teaching, and special methods in elementary school English, geography, history, and arithmetic, paralleling the practice teaching.

Only those students who show a disposition to do their best and who are able to achieve reasonable success in teaching will be permitted to continue in this course. From time to time the stronger students are given opportunity to test their power by substituting for the regular teachers in the city

schools in case of sickness. Upon such occasions the student assumes the entire responsibility of the work until the return of the regular teacher, unless this period exceeds one week. *Prerequisite:* Education 1. *Both semesters, 8–9, M. W. F.; 10–11, T. Th., and from 9–10, every day. Ten credits.* Orvis Ring School Building. Miss Day.

NOTE—Education 3 is also open to Senior College students. See same under Senior College Courses.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Psychology 5.) Lectures, readings, observations, and experiment. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequsite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. (Psychology 21.) This course deals with the development of the thought process, the formation of ideals, and social natures of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl. (Not given 1912–13.)

23. HISTORY OF EDUCATION. A study of the development of educational ideals from the time of the Greeks and Hebrews to the present, with special reference to the forces which have operated in the evolution of the various historic ideals and practices. *Both semesters, 9–10, M. W. F. Six credits.* 101 Stewart Hall. Professor Ordahl.

3. THEORY AND PRACTICE OF TEACHING. (See Education 3, Junior College Courses.) Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussions, and private conferences. *Prerequisite:* Education 21, or Psychology 1 and 3. *Both semesters, 8–9, M. W. F., 10–11, T. Th., and any hour from 9 to 3 for practice teaching.* Orvis Ring School Building. Miss Day.

XIV. PSYCHOLOGY

Junior College Courses

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher

mental processes, and the emotional life. *Prerequisite or parallel:* Hygiene 1, or Zoology 5. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings and laboratory work. A comparative study is made of the most recent experimental work on the genesis and function of consciousness in animal and human behavior. *Second semester. Lectures, 8–9, M. W. F. Laboratory, two one-hour periods per week, 1–2 or 2–3, T. Th. Three credits.* 101 Stewart Hall. Professor Ordahl.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Education 5.) Lectures, readings, observations, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite*: Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. (Education 21.) This course deals with the development of the thought process, the formation of ideals, and social natures of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl. (Not given 1912–13.)

22. GENETIC AND SOCIAL PSYCHOLOGY. A study of human behavior through the various stages of civilization, with special reference to the analysis of the psychic factors underlying the evolution of typical moral, ethical, and esthetic ideals. *Prerequisite:* Psychology 1 and 2. *Both semesters. Hours to be arranged. Four credits.* (This course will alternate with Education 21.) 101 Stewart Hall. Professor Ordahl.

XV. ZOOLOGY

PROFESSOR FRANDSEN, PROFESSOR DOTEN, MR. BROWN

Junior College Courses

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. Laboratory, 2–4:40, M. W. Four credits.* 202 Hatch Hall.

Professor Frandsen and Mr. Brown. Fee, $1 per semester; deposit, $2.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anatomy in the high school and as a preparation for research work in anatomy. *Prerequisite:* Zoology 1 and Hygiene 1. *Both semesters, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Ten credits.* 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

5. NEUROLOGY. Lectures, demonstrations and occasional laboratory exercise on the structure and physiology of the human nervous system. *Designed to give the necessary preparation for Psychology 1. First semester. Hours to be arranged.* 301 Hatch Hall. Professor Frandsen.

10. ECONOMIC ZOOLOGY. Lectures dealing with the habits and life histories of the more important economic vertebrates, insects and other arthropods, worms, and protozoa in their relation to Agriculture. One laboratory period per week. *Second semester. Three credits. (Given in alternate years to Juniors and Seniors in Agriculture.)* 301 Hatch Hall and Field. Professor Frandsen, Professor Doten. Fee, $1 per semester; deposit, $2.

Senior College Courses

23. HISTOLOGY. The methods of killing, fixing, sectioning, staining, and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisite:* Zoology 1 and 2, Hygiene 1. *First semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits.* 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

24. EMBRYOLOGY. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick and pig at successive stages of development. *Prerequisite:* Zoology 1, 2, 23, and Hygiene 1. *Second semester, 10–11, M. W. F. Laboratory 1–4:30, T. Th. Five*

credits. 202 Hatch Hall. Professor Frandsen. Courses 23 and 24 alternate with Course 2. Fee, $2 per semester; deposit, $2.

28. EVOLUTION. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon science and life in general. *Second semester. Hours to be arranged. Two credits*. Professor Frandsen.

40. RESEARCH COURSE. Students electing Zoology as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects selected from the different lines of zoological research, anatomy, physiology, histology, and embryology will be submitted to the choice of the student. If desired a student may elect thesis work in excess of the minimum one credit required. *Both semesters. Hours and credits to be arranged with individual student*. 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

For description of other courses in Zoology, see College of Agriculture.

XVI. HYGIENE

PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures 8–9, T. Th. Laboratory, 2–4:30, T. F. Eight credits*. 301 Hatch Hall. Professor Frandsen and Mr. Brown. Fee, $2 per semester; deposit, $2.

Senior College Courses

22. MICROBIOLOGY. Lectures and laboratory exercises on the morphology and life processes of the bacteria. *Prerequisite:* Hygiene 1, Botany 1, and Zoology 1. *First semester. Hours to be arranged. Four credits*. 301 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

23. MICROBIOLOGY. A continuation of Hygiene 22, dealing with plant microbe other than bacteria, and with the protozoa. *Prerequisite:* Hygiene 22. *Second semester. Hours to be arranged. Four credits*. 301 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

XVII. BOTANY

PROFESSOR KENNEDY, PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to the environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W. Laboratory 2–4:30, M. W. Four credits.* 301 Hatch Hall. Professor Frandsen and Mr. Brown. Fee, $1 per semester; deposit, $2.

2. CRYPTOGAMIC BOTANY. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. *Prerequisite:* Botany 1. *First semester. Lectures 9–10, T. Th. Laboratory, 2–4:20, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

3. COMPARATIVE HISTOLOGY OF PLANTS. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. *Prerequisite:* Botany 1 and 2. *First semester. Lectures, 9–10, M. W. Laboratory, 2–4:30, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

Senior College Courses

25. PHYSIOLOGICAL BOTANY. A course of experiments similar to that outlined in McDougal's Plant Physiology. *Prerequisite:* Botany 1, 2, and 3. *Second semester. Hours and credits to be arranged.* Professor Frandsen. Fee, $2 per semester; deposit, $2.

40. RESEARCH COURSE. This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Both semesters. Hours to be arranged. Four credits.* 303 Stewart Hall. Professor Kennedy.

For description of other courses in Botany, see College of Agriculture.

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

1*a*. TEXTILES. Hygienic and historic dress. Studies in color and design in relation to dress. Lectures on choice of design,

color and material in home decoration. Practice work in cutting, fitting and designing. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

2*a*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of means in accordance with dietetic and economic standards. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

3*a*. HISTORY OF COOKERY. Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

4*a*. SANITATION. Food tests. *Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

5*a*. LECTURE COURSE. The scientific housekeeper; domestic architecture, convenience, economy, beauty, and sanitary conditions discussed; food—purity, economy, nutritive value, age; dietetic standards considered. *One credit. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

6*a*. CAMP COOKING. Open to men students. *One credit. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

One credit only is given each semester for work in the Department of Domestic Science and no more than four credits will be accepted toward a degree. Fee for cooking is $1 per semester; for sewing, $1 per semester.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Junior and Senior College Courses

21. GENERAL GEOLOGY. The first semester's work deals chiefly with the dynamic and structural aspects of the subject, being a general discussion of geological forces and their results. During the second semester an outline is given of the history of the earth, including diastrophic changes, stratigraphic relationships, and the description of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *First semester, 10–11, M. W. F. Three credits. Second semester, 10–11, M. F. Two credits.* Mackay Mining Building. Professor Smith.

26. PHYSICAL GEOGRAPHY. Advanced course. *Prerequisite:* Elementary Physics and Chemistry. *Both semesters. Hours to be arranged. Four credits.* Mackay Mining Building. Professor Smith.

Senior College Courses

22. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisite:* Geology 21, Mineralogy 1a, 1b, and 3. *Second semester, 1–2, T. Th. Two credits.* Mackay Mining Building. Professor Smith.

23*a*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30 T. One credit.* Mackay Mining Building. Professor Smith.

23*b*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen, and in thin section with the microscope. *Prerequisite:* Mineralogy 24 and 25, and Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30 T. One credit.* Mackay Mining Building. Professor Smith. Deposit, $5.

24*a*. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 21. *Second semester. One credit.* Professor Smith and Assistant Professor Jones.

24*b*. FIELD GEOLOGY. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably some mining camp where both the surface and the underground geology may be investigated. The field for 1911 was in the vicinity of Yerington, Nevada. A concise report of the work, together with well-kept field notes, a finished geological map and cross-sections, is required of each member of the class. *Prerequisite:* Geology 21, 22, and 24a. *Three credits.* Professor Smith and Assistant Professor Jones.

24*c*. FIELD GEOLOGY. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspect of the work will be given. *Prerequisite:* Geology 24b. *First semester. Hours to be arranged.* Mackay Mining Building. Professor Smith.

25*a*. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal

ores, nonmetallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisite:* Geology 21, 22, and either 23a or 23b. *First semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Professor Smith.

25*b*. ECONOMIC GEOLOGY. A course on the general features of ore deposits, with discussion of some of the more important literature on the subject, and accompanied by the examination of abundant illustrative material. *Prerequisite:* Geology 25a. *Second semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Professor Smith.

27. PALEONTOLOGY. A brief laboratory course in elementary paleontology. *Second semester. Hours to be arranged. One credit.* Mackay Mining Building. Professor Smith.

40. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Smith.

60. GRADUATE COURSE. The original investigation of geologic problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Junior College Courses

1*a*. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

1*b*. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisite:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical

specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–4:30, W. Two credits.* Mackay Mining Building. Professor Smith.

24. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisite:* Mineralogy 1a and 1b, or 22; Physics 2 and 3. *First semester, 1–2, M. T. Two credits.* Mackay Mining Building. Professor Smith.

25. OPTICAL PROPERTIES OF MINERALS. Laboratory. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. Mineralogy 24 should be taken concurrently. *First semester, 1–4, F. One credit.* Mackay Mining Building. Professor Smith. Deposit, $5.

60. GRADUATE COURSE. To students suitably prepared opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith and Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, PROFESSOR JACOBSON, ASSISTANT PROFESSOR DINSMORE, MR. KENNEDY, MR. ANDERSON

Junior College Courses

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Designed for students who have not presented matriculation chemistry. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Mr. Anderson.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. Four credits.* 101 Chemistry Building. Professor Adams and Mr. Anderson. Fee, $2.50 per semester; deposit, $5.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to

explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Anderson. Fee, $2.50 per semester; deposit, $5.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 3 and 4. *First semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

6. QUANTITATIVE ANALYSIS. Special determinations in Analytical Chemistry will be assigned to meet the demands of the individual students and the department in which the degree is sought. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

Senior College Courses

22. INDUSTRIAL CHEMISTRY. A lecture course on the application of chemical principles to the industrial arts. The course includes the manufacture of acids, alkalies, cements, glass, pottery, explosives, dyes, sugars, soaps, paints, varnishes, and numerous other commercial products. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Professor Dinsmore.

23. TECHNICAL ANALYSIS. A laboratory course to accompany Chemistry 22. The analysis of certain commercial products that will suit the requirements of the individual student. *First semester. Hours to be arranged. Two credits.* Chemistry Building. Professor Dinsmore. Fee, $2.50 per semester; deposit, $5.

27. ORGANIC CHEMISTRY. Lectures on the carbon compounds. *Prerequisite:* Chemistry 3 and 4. (Given in alternate years with Chemistry 46 and 47.) *Both semesters, 10–11, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

28. ORGANIC CHEMISTRY. A laboratory course given in connection with Chemistry 27. *Both semesters, 2–4:30, M. T. Four credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit $5.

40. THESIS WORK FOR UNDERGRADUATES. Laboratory and

library work on special topics to be chosen by the student in consultation with the instructors. *Prerequisite:* Chemistry 6, 27, and 28. *Second semester. Hours and credits to be arranged.* Chemistry Building. Professors Adams, Jacobson, and Dinsmore. Fee, $2.50 per semester; deposit, $5.

Graduate Courses

44. PHYSICAL CHEMISTRY. A lecture course correlating facts and theories concerning chemical reactions, solutions, vapor tension, osmotic pressure, viscosity, polarimetry, electrical conductivity, thermo-chemistry, chemical dynamics, and equilibrium, and related phenomena. *Prerequisite:* Chemistry 27 and 28, and Physics 3. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Professor Jacobson.

45. PHYSICAL CHEMISTRY. A laboratory course to accompany Chemistry 44. *Second semester. Hours to be arranged. Two credits.* 207 Chemistry Building. Professor Jacobson. Fee, $2.50 per semester; deposit, $5.

46. HISTORY OF CHEMISTRY. A lecture course on the history and development of the science of Chemistry. (Given in alternate years with Chemistry 27.) *First semester, 9–10, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

47. ADVANCED ORGANIC CHEMISTRY. A lecture course on special chapters in organic chemistry. (Given in alternate years with Chemistry 27.) *Prerequisite:* Chemistry 27, 28, and German 2. *Second semester, 10–11, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

48. RADIOACTIVITY. A lecture course on the radioactivity of ores and elements. Methods of testing and properties of the Alpha, Beta, Gamma, and X rays. Radium emanations and its bearings upon the degradation of the elements. *Prerequisite:* Chemistry 44, and Physics 22. *First semester, 10–11, F. One credit.* 205 Chemistry Building. (Not given 1911–12.) Professor Jacobson.

60. THESIS COURSE FOR GRADUATE STUDENTS. Special problems for research, chosen in consultation with some member of the department, and carried on under his direction. No student will be admitted to this course who has not completed three years' work in Chemistry. *Hours and credits to be arranged.* Chemistry Building. Professors Adams, Jacobson, and Dinsmore. Fee, $2.50 per semester; deposit, $5.

XXIX. PHYSICS

PROFESSOR HARTMAN, MR. ————

Junior College Courses

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition, but with a deficiency in this subject. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely quantitative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurement. *Prerequisite:* Plane Geometry. A knowledge of Trigonometry also is desirable. *Both semesters. Lectures 10–11, daily; Laboratory, 2–4:30, F. Eight credits.* 5, 6, and 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisite:* Mathematics 1 and 7; Physics a or Physics 1. *Both semesters, 9–10, daily. Ten credits.* 11 Physics Building. Professor Hartman.

3. PHYSICAL MEASUREMENTS. Experimental work of distinctly quantitative character is done in heat and mechanics, sound and light, and electricity and magnetism. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisite:* Mathematics 1 and 7; Physics 1. *Both semesters, 2–4:30, W. Th. Four credits.* 5 and 6 Physics Building. Professor Hartman. Fee, $2 per semester; deposit, $5.

Senior College Courses

21. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisite:* Physics 1, 2, and 3. *First semester, 2–4:30, T. W. One or two credits.* 5 and 6 Physics Building. Professor Hartman. Fee, $2 per semester; deposit, $5.

22. HEAT AND THERMODYNAMICS. Lectures and recitations accompanied by experimental work of a quantitative character. This course, together with Physics 23, is introductory to Mathematical Physics. Many of the more difficult subjects that were

merely touched upon in Physics 1 will be fully treated. *Prerequisite:* Physics 1, 2, 3, and Mathematics 7, 8, 9. *Both semesters, 8–9, T. Th. Four credits.* 11 Physics Building. Professor Hartman.

23. LIGHT AND PHYSICAL OPTICS. Lectures with experimental illustration on selected topics in light, including discussion of wave theory, diffraction, interference, resolving power of optical instruments, dispersion and absorption, spectrum analysis, double refraction and polarization. *Prerequisite:* Physics 2, 3; Mathematics 7, 8, and 9. *Both semesters, 8–9, T. Th. Four credits.* 11 Physics Building. Professor Hartman.

24. PHYSICAL OPTICS. Laboratory exercises in connection with Course 23. *First semester, 2–4:30, M. W. Two credits.* 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

25. HISTORY OF PHYSICS. Lectures and recitations. Preparation of reports and discussion of assigned topics by members of the class. *Prerequisite:* Physics 1, 2, 3. *Both semesters, 10–11, Th. One credit.* 11 Physics Building. Professor Hartman.

26. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisite:* Physics 2. *First semester, 8–9, T. Th. Two credits.* 11 Physics Building. Professor Hartman.

40. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

XXXI. MATHEMATICS

PROFESSOR HASEMAN, MR. ———

Junior College Courses

1. ALGEBRA. A review of elementary algebra, quadratic equations, exponents and radicals, binomial theorem, mathematical induction, logarithms, progressions, determinants, theory of equations. *First semester, 1–2. Three credits.* 107 Morrill Hall. Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, the sphere. *Second semester, six weeks, 1–2. One credit.* 107 Morrill Hall. Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of

triangles. *Second semester, twelve weeks, 1–2. Two credits.* 107 Morrill Hall. Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy with a study of the solar system, the stars, comets, etc. *First semester, 9–10. Three credits.* 107 Morrill Hall. Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to contain problems of practical astronomy. The theory and the use of the transit instrument. The determination of time, latitude and longitude. *Second semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review of algebra and trigonometry; advanced algebra to suit the needs of the students; geometry of the point, straight line, transformation of coordinates, conic sections, and the general equation of the second degree. Some time will be spent on the analytic geometry of three dimensions. *Both semesters, 9–10. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminant forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester, 10–11. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester, 9–10. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

25. HISTORY OF MATHEMATICS. Lectures and assigned reading on the history of the mathematical science. *First semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

For students who desire to pursue Mathematics as a major subject, the following more advanced courses can be arranged: Theory of Equations; Advanced Calculus; Differential Equations; Theory of Numbers; Theory of the Functions of a Complex, Variable, etc.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

Junior College Courses

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Two months' course during winter, 11–12, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months' course during winter, 11–12, F. One-half credit.* Captain Applewhite.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS MEIGHAN

NOTE—This course is offered to all young women of the University, and is required in the Freshman and Sophomore years as part of the regular work. Two (or three) hours each week are required of all students taking the course. Upon entering the class students are carefully examined by a physician with particular attention to the lungs and heart action, and information concerning the general health and any inherited tendencies is solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium, make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, and regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

A deposit of 50 cents at the beginning of the year is required of all students, the same to be returned at the close of the year to students returning keys to lockers.

1. CALISTHENICS. Free work, wands, Indian clubs, bar-bells, dumb-bells, bounding balls, march tactics, elementary folk and national dances, games, as basket-ball, captain ball, indoor

[1]For exceptions, see organization of Battalion of Cadets, p. 73.

baseball, handball and tennis. *Hours to be arranged.* Gymnasium. Miss Meighan.

2. ADVANCED SWEDISH AND GERMAN GYMNASTICS, advanced folk and national dances, advanced work in clubs, bar-bells, and dumb-bells; light apparatus work; the horse; parallel bars, mat and buck; games, tennis, basket-ball and indoor baseball. *Hours to be arranged.* Gymnasium. Miss Meighan.

A course in Physical Education, consisting of one hour a week in the evening, will be open for women who cannot attend class during the day. *Hours to be arranged.* Gymnasium. Miss Meighan.

One credit is given for work in the Department of Physical Education.

COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE

2. SCHOOL OF DOMESTIC SCIENCE[1]

[1] The School of Domestic Science is as yet only partially organized.

COLLEGE OF AGRICULTURE

FACULTY

JOSEPH EDWARD STUBBS.....President
ROBERT LEWERS.....Vice-President
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY.....Professor of Botany, Horticulture and Forestry
SAMUEL BRADFORD DOTEN.....Professor of Entomology
GORDON HAINES TRUE.....Professor of Agriculture and Animal Husbandry
W. S. TANGIER SMITH[1].....Professor of Geology and Mineralogy
MAXWELL ADAMS.....Professor of Chemistry
WINFRED BERDELL MACK.....Professor of Bacteriology and Veterinary Science
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HERBERT PRENTISS BOARDMAN.....Professor of Civil Engineering
LOWE ABEEL MCCLURE[2].....Professor of Military Science and Tactics and Instructor in Physical Training for Men
CARL ALFRED JACOBSON[3].....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
STERLING PRICE FERGUSSON.....Professor of Meteorology and Climatology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
KATE BARDENWERPER.....Assistant Professor in Domestic Science
CHARLES S. KNIGHT[4].....Assistant Professor of Agronomy
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
AMOS ARTHUR HELLER.....Assistant Professor of Botany, Horticulture and Forestry
SANFORD CROSBY DINSMORE.....Assistant Professor of Agricultural Chemistry
GEORGE DELAFIELD POWERS.....Instructor in Mechanical Engineering
GUSTAVUS SWIFT PAINE.....Instructor in English
ALBERT W. PRESTON.....Instructor in Mechanical Engineering
HELEN ANN MEIGHAN.....Instructor in Physical Education for Women
FRANK LEROY PETERSON.....Instructor in Irrigation and Farm Mechanics
CHARLES LEROY BROWN.....Assistant in Biology
WALTER WILLIAMS ANDERSON.....Assistant in Chemistry
MILES BRYCE KENNEDY.....Assistant in Chemistry
AUGUST HOLMES.....Student Assistant in Mathematics
CARL LAMPE TIBBALS.....Student Assistant in Civil Engineering
MORRIS D. ANDERSON.....Student Assistant in Civil Engineering

[1]Absent on leave, 1912-1913. [2]Detail expires, May 31, 1912.
[3]Absent on leave, 1911-1913. [4]Resigned, January, 1912.

AIM

The aim of the College of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operation of farming, gardening and stock raising, but also to give such training in English, mathematics, and the sciences as will furnish a well-rounded education.

EQUIPMENT

FARM—The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, affords a first-hand acquaintance with the problems and methods of practical agriculture and horticulture.

LIVE STOCK—The college herds kept upon the adjacent State Fair grounds contain high-class representation of Percheron horses, the leading dairy and beef breeds of cattle, the middle and fine wool breeds of sheep, and the leading breeds of hogs. In this department the college is particularly strong, few, if any, of the western colleges having a better equipment of farm animals.

DAIRY—Provision has been made for the equipment of a strictly up-to-date dairy laboratory with the latest machinery. This laboratory will be for the purpose of teaching to the students the manufacture of butter and cheese and will be established during the year. This department will be in charge of a competent instructor.

SHOPS—The shops for the teaching of wood-work and blacksmithing are equipped for the best of work. Arrangements have been made for the housing and use of the representative types of farm machinery used in the various field operations.

SHORT COURSES

A short winter course in dairying will be given during the year, definite announcement of which will be made later. This course will include lectures on milk and its products, the dairy breeds of cattle, their care and feeding, as well as practical work in the manufacture of butter, cheese, and ice cream, and the sanitary handling of milk for the city trade.

EXTENSION WORK.

As in the past, the members of the Agricultural College and Experiment Station Staff are available for talks to farmers on

subjects connected with their work, and communities are urged to invite the services of the Station men when they are desired.

Arrangements have been made with the Southern Pacific Railroad Company for a demonstration train, equipped to give extension work in agriculture, to be operated over its lines in Nevada during the coming fall.

PRACTICUMS

During the Freshman and Sophomore years of the four-year course, one period a week will be given to forms of practical work in agriculture, horticulture, and animal husbandry not included in the laboratory courses. It is not intended that a student shall graduate who does not know how the common farm operations should be done, and it is intended that these practicum courses shall furnish the student an opportunity to learn to do those things which he failed to get in his farm experience or town life. The practicums will be chosen from week to week with reference to the needs of the individual student, and when possible will be supplementary to the courses being taken in class-room and laboratory.

CONDITIONS OF ADMISSION

SCHOOL OF AGRICULTURE

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from the accredited school or not. The examination will be held in August of each year.

3. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

For entrance to the College of Agriculture, the candidates must present English a and b; Mathematics a and b; Language, other than English, 2 units[1], American History and Civics, 1 unit: Science, 2 units; 8 other units[2], to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations under the recommendation of the professor under whom the special studies are to be taken, but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of the College of Agriculture and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

The Degree of Bachelor of Science in Agriculture is conferred upon students, who in addition to meeting the requirements in Military Science, have satisfactorily completed the full course of study, aggregating 144 semester-units[3], in the School of Agriculture as follows:

[1] This requirement will go into effect August 1, 1914.

[2] August 1, 1914, these units will be reduced to 6.

[3] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

SCHOOL OF AGRICULTURE

COURSE OF STUDY

FRESHMAN

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
English 1	..	3	English 1	..	3
Mathematics	..	3	Mathematics 2, 3	..	3
Zoology 1	2	3	Botany 1	2	2
Agronomy 1	..	3	Animal Husbandry 1	1	3
Mechanic Arts 1	1	..	Mechanic Arts 2	1	..
Elective	..	3	Elective	..	3
Total		18	Total		18

SOPHOMORE

First Semester			*Second Semester*		
English 4	..	3	English 4	..	3
Chemistry 1, 2 or 3, 4	2	2	Chemistry 1, 2 or 3, 4	2	2
Animal Husbandry 4	2	3	Horticulture 1	2	3
Agronomy 5	..	3	Agronomy 2	..	3
Elective	..	3	Elective	..	3
Total		18	Total		18

JUNIOR

First Semester			*Second Semester*		
Agronomy 23	1	3	Animal Husbandry 23, 25	1	3
Industrial Botany 26	1	2	Economic Entomology	1	2
Chemistry 29, 30	2	2	Chemistry 29, 30	2	2
C. E. 21 (Surveying)	2	2	C. E. 35 (Rural Engineering)	2	2
Elective	..	3	Elective	..	3
Total		18	Total		18

SENIOR

First Semester			*Second Semester*		
Agronomy 27	2	3	Veterinary Science 21	3	2
Thesis	..	2	Thesis	..	2
Electives	..	11	Electives	..	11
Total		18	Total		18

SCHOOL OF DOMESTIC SCIENCE

The courses in Domestic Science have thus far necessarily been restricted to practical laboratory work. In the past year, however, there have been added to the Library many books along the lines of sanitation, dietetics, hygiene, and food chemistry, thus enabling the student to do independent library work. The library will be still further increased, and related courses in Chemistry and Hygiene will be added.

From the beginning the young women of our State have shown strong interest in the various phases of this work. The

of production of the things of everyday life, such as coffee, cocoa, tea, rubber, cotton, rice, rope and paper-making, etc. Poisonous plants and weeds as affecting conditions in Nevada. Important grasses and forage plants of the ranges. *First semester. Lectures and laboratory. Three credits.* 303 Stewart Hall. Professor Kennedy.

XVIII. HORTICULTURE

PROFESSOR KENNEDY, ASSISTANT PROFESSOR HELLER

Junior College Courses

1. GENERAL HORTICULTURE. A general résumé of all branches of horticulture, including floriculture, gardening, fruit-growing, the making of lawns, planting of ornamental trees and shrubs, and the beautifying of the home and farm grounds. Lectures and practicums in Greenhouse and on college grounds. *Second semester. Three credits.* 303 Stewart Hall. Professor Kennedy. *Bailey:* Manual of Gardening. Fee, $2 per semester.

XIX. FORESTRY

ASSISTANT PROFESSOR HELLER

Junior College Courses

1. DENDROLOGY. The North American trees and their uses. *Both semesters. Hours to be arranged. Six credits.* 303 Stewart Hall. Assistant Professor Heller.

2. ELEMENTARY FORESTRY. The effects of deforestation on the water supply, forest protection and regeneration, care of forests, etc. *Prerequisite:* Botany 1, or Forestry 1. *Second semester. Hours to be arranged. Three credits.* 303 Stewart Hall. Assistant Professor Heller.

XX. AGRONOMY

PROFESSOR TRUE, PROFESSOR ———, MR. PETERSON

Junior College Courses

NOTE—The courses in Agronomy will be revised during the summer of 1912.

1. ELEMENTARY AGRICULTURE. Introduction to Animal Husbandry, Horticulture, Agronomy, and Dairying. The soil—its formation, texture, plant-food requirements, moisture, tillage and fertility; the plant—its relation to soil and climate, its propagation, growth and cultivation, and the kind of crops and their culture; the animal—its life, feeding and breeding. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Professor ———.

2. FARM ENGINEERING. The laws and principles which control the practice of agriculture, including the following subjects: The invention, history and development of farm machinery; principles of construction and operation, with a comparison of the different types or makes of machines of different classes according to their adaptation for special conditions and uses; friction and lubricants; construction and ventilation of farm buildings; strength of materials; construction and maintenance of country roads; farm wells, windmills and pumps; principles of draft. *King:* Physics of Agriculture. *Davidson and Chase:* Farm Machinery and Farm Motors. *Second semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Professor ———.

4. FARM CROPS I. Forage crops, legumes and grasses; the special uses of these crops as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plan for the rotation of soiling crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—The examination of samples of the standard varieties of grasses, clovers and other forage plants; the study of grass, clover and alfalfa seeds with reference to quality, purity and freedom from adulterants and weed seeds; the identification of seeds of noxious weeds which may be found in grass, clover or alfalfa seed. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Professor ———.

5. SOILS. The nature, functions, origin, texture, comparison and kinds of soil; the relations of soil to water, air and sunlight; the treatment of soils to maintain fertility; and their cultivation in connection with the growing of crops. *First semester. Hours to be arranged. Three credits.* 101 Hatch Hall. Professor ———.

Senior College Courses

23. FARM CROPS II. The principal cereal crops—corn, wheat, oats, barley, rye, rice, sorghum, etc. *Hunt:* Cereals of America. Laboratory—The study of the matured plant of the different varieties of grain, grasses and alfalfa; the judging of grain and hay according to the commercial standards of perfection for pure-bred varieties; and the judging of alfalfa seeds. *Knight:* Judging and Commercial Grading of Small Grains and Hay. *First semester. Hours to be arranged. Four credits.* 101 Hatch Hall. Professor ———.

26. FARM MECHANICS. A course of instruction in the machin-

ery of the farm. Construction and use of modern field machinery for tillage, seeding and harvesting operations; general labor saving machinery adapted to the different operations of farm work; farm motors, animal treadmill, water, gasoline, and electric engines; gasoline and steam tractors; farm pumps, wells, windmills, pressure water-systems. Usually a number of machines adapted for each of these purposes are available from a number of different manufacturers. Largely work in examining, setting up, testing and operating the field machines named. *Davidson and Chase:* Farm Machinery and Farm Motors. *Second semester. Lectures, M. W. F.; Lab. 2–4:30.* Mr. Peterson.

27. FARM MANAGEMENT. The evolution of farming; the relation of capital and labor to farm management; the general management of implements and equipment; ownership versus rental of lands; the choice of a farm; systems of farming; farming compared with other lines of business; marketing problems; advertising; farm records and farm accounts; the management of fields, crops and manures. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor True.

28. IRRIGATION. A brief review of the history of irrigation, the development of irrigation law, and the doctrine of appropriation. The principles of irrigation, the measurement of water on the farm, the duty of water. A study of the relation of rainfall, evaporation and seepage to irrigation. The methods of irrigation as practiced in different parts of the country are taken up. *Mead:* Irrigation Institutions. *Wilson:* Irrigation Engineering. *Second semester. Five credits.* Mr. Peterson.

XXI. ANIMAL HUSBANDRY

PROFESSOR TRUE

Junior College Courses

1. BREEDS OF LIVE STOCK. The origin, development, characteristics, and uses of pure breeds of farm animals. For illustration the animals of the University farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *Second semester. Hours to be arranged. Four credits* 101 Hatch Hall. Professor True.

2. ANIMAL BREEDING. A discussion of the principles underlying the art of breeding, the aim of which is to develop, maintain and improve the various breeds and types of farm animals

and farm crops, studied with special reference to their application to breeding of farm animals. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor True.

4. STOCK JUDGING. Practice in judging live stock, to gain familiarity with the points of excellence in the various breeds of farm animals. *Craig:* Judging Live Stock. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor True.

Senior College Courses

23. FEEDING ANIMALS. The principles underlying, and problems connected with, the feeding of farm animals. *Smith:* Profitable Stock Feeding. *Second semester. Hours to be arranged. Two credits.* 101 Hatch Hall. Professor True.

25. LIVESTOCK REGISTRATION. The details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them; a study of pedigrees and how to keep herd records. *Second semester. Hours to be arranged. One credit.* 101 Hatch Hall. Professor True.

26. ADVANCED STOCK FEEDING. Lectures and laboratory, laboratory to consist of conducting actual feeding experiments with farm animals. *Second semester. Three credits.* Station Farm. Professor True.

27. ADVANCED STOCK JUDGING. The judging of animals in classes, as at fairs and stock shows. Laboratory twice a week. *Prerequisite:* Animal Husbandry 1 and 4. *Hours and credits to be arranged.* Professor True.

XXII. VETERINARY SCIENCE

PROFESSOR MACK

Junior and Senior College Courses

21. VETERINARY SCIENCE. The more common ailments of domesticated animals, the maintenance of sanitary conditions, the methods of combating infection. This course given in alternate years for Juniors and Seniors. *Second semester, daily. Hours to be arranged. Five credits.* 204 Hatch Hall. Professor Mack.

XXIII. DAIRYING

PROFESSOR ———

NOTE—The course in Dairying will be revised during the summer of 1912.

1. BUTTER MAKING. Practical butter making, including the use of the hand separator, the ripening of cream, churning,

working and the putting up of butter for market, and the use of the Babcock tester. Lectures on the formation and composition of milk; ferments and their action; testing for purity and value; methods of manufacturing butter and cheese. *Hours and credits to be arranged.*

XXIV. ENTOMOLOGY

PROFESSOR DOTEN

(See Zoology 10.)

XXV. DOMESTIC SCIENCE

ASSISTANT PROFESSOR BARDENWERPER

1*b*. TEXTILES. The history and the hygiene of dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

2*b*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

3*b*. HISTORY OF COOKERY. Adulterations of foods. Dietetic errors. Invalid cookery. Chafing-dish course. *Both semesters. Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

4*b*. DIET IN HEALTH AND DISEASE. *Hours and credits to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

5*b*. LECTURE COURSE. The scientific housekeeper; domestic architecture, convenience, economy, beauty, and sanitary conditions discussed; food—purity, economy, nutritive value, age; dietetic standards considered. *One credit. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

6*b*. CAMP COOKING. Open to men students. *One credit. Hours to be arranged.* 1 Stewart Hall. Assistant Professor Bardenwerper.

Fee for cooking, $1 per semester; sewing, $1 per semester.

XXVI. GEOLOGY

PROFESSOR SMITH

Junior College Courses

1*c*. ELEMENTARY GEOLOGY. A brief elementary course in Geology. *Second semester, 10–11, T. Th. Two credits.* Mackay Mining Building. Professor Smith.

For description of other courses in Geology, see College of Engineering and College of Arts and Science.

XXVII. MINERALOGY

ASSISTANT PROFESSOR JONES

Junior College Courses

1*c*. ELEMENTARY MINERALOGY AND PETROLOGY. A brief course in the determination of the common minerals and rocks. *First semester, 2–4:30, M. One credit.* Mackay Mining Building. Assistant Professor Jones.

For description of other courses in Mineralogy, see College of Engineering and College of Arts and Science.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND JACOBSON, ASSISTANT PROFESSOR DINSMORE, MR. KENNEDY, MR. ANDERSON

Junior College Courses

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Designed for students who have not presented matriculation chemistry. *Both semesters. Four credits.* 206 Chemistry Building. Mr. Anderson.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. Four credits.* 101 Chemistry Building. Professor Adams and Mr. Anderson. Fee, $2.50 per semester; deposit, $5.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Anderson. Fee, $2.50 per semester; deposit, $5.

Senior College Courses

29. AGRICULTURAL CHEMISTRY. A lecture course on the application of chemical principles to farm economy. The following topics will be dealt with: Composition of plants, soil and fertilizers; soil fertility and soil toxicity; metabolic changes in animal and plant nutrition; the use of instruments and methods in agricultural analysis. *Prerequisite:* Chemistry 1 and 2.

Both semesters. Hours to be arranged. Four credits. 206 Chemistry Building. Professor Jacobson.

30. AGRICULTURAL ANALYSIS. A laboratory course to accompany Chemistry 29. This course includes the analysis of farm and dairy products, soils, fertilizers, stock foods and irrigation waters. *Both semesters, 2–4:30, T. W. Four credits.* 207 Chemistry Building. Professor Jacobson and Mr. Kennedy. Fee, $2.50 per semester; deposit, $5.

XXX. METEOROLOGY AND CLIMATOLOGY

PROFESSOR FERGUSSON

Junior College Courses

1. METEOROLOGY AND CLIMATOLOGY. Elements of Meteorology and Climatology, including methods of observation and reduction of observations; errors and exposure of instruments; practical uses of meteorological data, weather maps, forecasting; periodicity; climatology of the United States. Lectures and recitations. *Second semester. Hours and credits to be arranged.* Station Library. Professor Fergusson.

Senior College Courses

21. ADVANCED COURSE. Physics of atmosphere, aerology; laboratory work, including theory and testing of instruments; original experimental subjects. *Second semester. Hours and credits to be arranged.* Professor Fergusson.

XXXI. MATHEMATICS

PROFESSOR HASEMAN, MR. ———

Junior College Courses

1. ALGEBRA. A review of elementary algebra, quadratic equations, exponents and radicals, binomial theorem, mathematical induction, logarithms, progressions, determinants, theory of equations. *First semester, 1–2. Three credits.* 107 Morrill Hall. Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, the sphere. *Second semester, six weeks, 1–2. One credit.* 107 Morrill Hall. Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, twelve weeks, 1–2. Two credits.* 107 Morrill Hall. Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy, with a study of the solar system, the stars, comets, etc. *First semester, 9–10. Three credits.* 107 Morrill Hall. Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to certain problems of practical astronomy. The theory and the use of the transit instrument. The determination of time, latitude, and longitude. *Second semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review of algebra and trigonometry; advanced parts of algebra to suit the needs of the students; geometry of the point, straight line, transformation of the coordinates, conic sections and the general equation of the second degree. Some time will be spent on the analytic geometry of three dimensions. *Both semesters, 9–10. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminant forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester, 10–11. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia, and centers of gravity. *Second semester, 10–11. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

25. HISTORY OF MATHEMATICS. Lectures and assigned reading on the history of the mathematical science. *First semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

For students who desire to pursue Mathematics as a major subject, the following more advanced courses can be arranged: Theory of Equations; Advanced Calculus; Differential Equations; Theory of Numbers; Theory of the Functions of a Complex, Variable, etc.

XXXV. MECHANIC ARTS

MR. POWERS, MR. PRESTON

Junior College Courses

1. BENCH WORK AND WOOD TURNING. *First semester. Hours to be arranged. Two credits.* 201 Mechanical Building. Mr. Powers. Fee, $2 per semester.

2. FORGING AND BLACKSMITHING. *Second semester. Hours to be arranged. Two credits.* 5 Mechanical Building. Mr. Preston. Fee, $2 per semester.

For description of other courses in Mechanic Arts, see College of Engineering.

XXXVI. CIVIL ENGINEERING

PROFESSOR BOARDMAN, MR. ANDERSON

Senior College Courses

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. In classroom, field, and drafting room, instruction is given in plane and topographic surveying, computation and mapping. *Prerequisite:* Plane Trigonometry. *First semester. Recitations or lectures, 1–2; field or drafting, 2–4:30, T. Th. Four credits.* Electrical Building. Professor Boardman. Deposit, $5.

35. RURAL ENGINEERING. Road building and maintenance; farm drainage; the construction of farm buildings and the use of concrete in farm construction. *Prerequisite:* C. E. 21. *Second semester. Recitations or lectures, 1–2; field or drafting, 2–4:30, W. F.* Electrical Building. Professor Boardman. Deposit, $5.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

Junior College Courses

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Two months' course during winter, 11–12, F. One credit.* Cadet Officers.

[1]For exceptions, see organization of Battalion of Cadets, p. 73.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months' course during winter, 11–12. F. One-half credit.* Captain Applewhite.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS MEIGHAN

NOTE—This course is offered to all young women of the University, and is required in the Freshman and Sophomore years as part of the regular work. Two (or three) hours each week are required of all students taking the course. Upon entering the class students are carefully examined by a physician with particular attention to the lungs and heart action, and information concerning the general health and any inherited tendencies is solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium, make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, and regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

A deposit of 50 cents at the beginning of the year is required of all students, the same to be returned at the close of the year to students returning keys to lockers.

1. CALISTHENICS. Free work, wands, Indian clubs, bar-bells, dumb-bells, bounding balls, march tactics, elementary folk and national dances, games, as basket-ball, captain ball, indoor baseball, handball and tennis. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

2. ADVANCED GERMAN AND SWEDISH GYMNASTICS, advanced folk and national dances, advanced work in clubs, bar-bells, and dumb-bells; light apparatus work; the horse; parallel bars, mat and buck; games, tennis, basket-ball, and indoor baseball. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

A course in Physical Education, consisting of one hour a week in the evening, will be open for women who cannot attend the class during the day. *Hours to be arranged.* Gymnasium. Miss Meighan.

One credit is given for work in the Department of Physical Education.

[1]For exceptions, see organization of Battalion of Cadets, p. 73.

COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL AND ELECTRICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

COLLEGE OF ENGINEERING

FACULTY

JOSEPH EDWARD STUBBS.....President
ROBERT LEWERS.....Vice-President
GEORGE J. YOUNG.....Professor of Mining and Metallurgy
JAMES GRAVES SCRUGHAM.....Professor of Mechanical Engineering
LOWE ABEEL MCCLURE[1].....Professor of Military Science and Tactics and Instructor in Physical Training for Men
W. S. TANGIER SMITH[2].....Professor of Geology and Mineralogy
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
LEON WILSON HARTMAN.....Professor of Physics
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
SANFORD CROSBY DINSMORE.....Assistant Professor of Chemistry
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GUSTAVUS SWIFT PAINE.....Instructor in English
GEORGE DELAFIELD POWERS.....Instructor in Mechanical Engineering
ALBERT W. PRESTON.....Instructor in Mechanical Engineering
WALTER S. PALMER.....Instructor in Mining and Metallurgy
WALTER WILLIAMS ANDERSON.....Assistant in Chemistry
AUGUST HOLMES.....Student Assistant in Mathematics
CARL LAMPE TIBBALS.....Student Assistant in Civil Engineering
MORRIS D. ANDERSON.....Student Assistant in Civil Engineering

AIM

The aim of the College of Engineering is to equip young men with such knowledge of mining, mechanical, electrical, and civil engineering as is essential for entrance into these professions. The technical courses of study are arranged and directed with the purpose of preparing them for immediate usefulness. The instruction is given both by lectures and recitations, supplemented by work in the drafting room, field, laboratory and shop.

EQUIPMENT

For a general description of the equipment of the College of Engineering, see Mackay Mining Building, Mechanical Build-

[1]Detail expires May 31, 1912. [2]Absent on leave, 1912–1913.

ing, Electrical Building, Chemistry Building, Laboratories for Geology and Mineralogy, Laboratories of the Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

CONDITIONS OF ADMISSION

1. Entrance to the Engineering Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work done here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1
11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1
18. Agriculture	½ or 1
19. Manual Training	½

For entrance to the Engineering Schools, the candidates must present English a and b; Mathematics a, b, c, d, and e; Language, other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units, one of which must represent advanced work; 6 other units[2], to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination, on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the department concerned.

[1] This requirement will go into effect August 1, 1914.
[2] August 1, 1914, these units will be reduced to 4.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of the College of Engineering, and have secured credit for the first two years' work required in their respective schools, To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

THE BACCALAUREATE DEGREE

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical or Electrical Engineering, upon students who have satisfactorily completed the full course of study in the School of Mechanical and Electrical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

In all the schools, however, the requirements in Military Science must be met.

DEGREES OF MINING, MECHANICAL, ELECTRICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, Electrical Engineer, or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Courses and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COURSES OF STUDY

FRESHMEN, ALL SCHOOLS

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
English 1	..	3	English 1	..	3
Chemistry 3 and 4	2	2	Chemistry 3 and 4	2	2
Mathematics 7	..	3	Mathematics 7	..	3
Drawing 1 and 2	3	..	Drawing 4	3	..
Mechanic Arts 1, 2 and 3	2	..	Mechanic Arts 2, 3 and 4	2	..
Elective	..	3	Elective	..	3
Total		18	Total		18

SCHOOL OF MINES

SOPHOMORE YEAR

First Semester			*Second Semester*		
Mineralogy 1a	2	..	Mineralogy 1b	2	..
Chemistry 5	3	..	Chemistry 6	3	..
Mathematics 8	..	5	Mathematics 9	..	3
Physics 2 and 3	2	5	Physics 2 and 3	2	5
Elective	..	1	Mineralogy 3	..	2
			Elective	..	1
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Mining 31a and 32	1	1	Mining 31b and 32	2	1
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Geology 21	..	2
Geology 21	..	3	Geology 22 and 23a or 23b	1	2
Mathematics 20	..	3	Field Geology 24a	1	..
Mathematics 21	..	2	Mathematics 20	..	3
Mining 27	..	2	Mining 27	..	2
Total		18	Total		18

Summer School of Geology (Geology 24b), 4 weeks.....3 credits
Summer School of Mine Surveying (Civil Eng. 32), 4 weeks.....3 credits

SENIOR YEAR

First Semester			*Second Semester*		
Mining 21	..	4	Mining 22	..	4
Mining 23a	2	..	Mining 23b	2	..
Mining 28	..	4	Mining 29	..	4
Mining 30	2	..	Mining 30	2	..
Mining 36	..	1	Mining 36	..	1
Geology 25a	..	3	Mining 40, Thesis	2	..
Civil Engineering 28	..	2	Elective	..	3
Total		18	Total		18

SCHOOL OF MECHANICAL AND ELECTRICAL ENGINEERING

SOPHOMORE YEAR

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
Mechanical Engineering 1	..	2	Electrical Engineering 1	..	2
Mechanic Arts 3	3	..	Mechanical Engineering 2	..	2
Physics 2 and 3	2	5	Mechanic Arts 3	3	..
Mathematics 8	..	5	Physics 2 and 3	2	5
Elective	..	1	Mathematics 9	..	3
			Drawing 4	..	1
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Electrical Engineering 21	..	3	Electrical Engineering 22	..	1
Mathematics 20	..	3	Mechanical Engineering 23	..	2
Mathematics 21	..	2	Mechanical Engineering 24	..	1
Drawing 25	3	..	Mathematics 20	..	3
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Drawing 26	3	..
Elective	..	1	Elective	..	4
Total		18	Total		18

SENIOR YEAR

First Semester			*Second Semester*		
Mechanical Engineering 25	..	4	Mechanical Engineering 27	..	2
Mechanical Engineering 26	..	2	Mechanical Engineering 28	1	1
Mechanical Engineering 30	1	1	Electrical Engineering 24	..	2
Electrical Engineering 23	..	3	Electrical Engineering 26	..	2
Civil Engineering 28	..	2	Drawing 27 or 28	2	..
Drawing 27	3	..	Mechanical Engineering 40,		
Elective	..	2	(Thesis)	..	2
			Elective	..	6
Total		18	Total		18

SCHOOL OF CIVIL ENGINEERING

SOPHOMORE YEAR

First Semester			*Second Semester*		
Mineralogy 1a	2	..	Physics 2 and 3	2	5
Physics 2 and 3	2	5	Mathematics 9	..	3
Mathematics 8	..	5	Mechanical Engineering 1	..	2
Mechanical Engineering 1	..	2	Drawing 3a	1	..
Elective	..	2	Drawing 4	3	..
			Elective	..	2
Total		18	Total		18

JUNIOR YEAR

First Semester	LAB	LEC.	*Second Semester*	LAB.	LEC.
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Civil Engineering 26	..	3
Mathematics 20	..	3	Civil Engineering 27	1	2
Mathematics 21	..	2	Mathematics 20	..	3
Electrical Engineering 21 or Geology 21	..	3	Mathematics 21	..	2
Elective	..	4	Elective	..	3
Total		18	Total		18

Summer School of Mine Surveying (Civil Eng. 32), 4 weeks.....3 credits

SENIOR YEAR

First Semester			*Second Semester*		
Civil Engineering 23	..	4	Civil Engineering 24	4	1
Civil Engineering 25	2	3	Civil Engineering 30	..	2
Civil Engineering 28	..	2	Civil Engineering 31	..	2
Civil Engineering 33	1	2	Civil Engineering 33	2	1
Civil Engineering 36	..	1	Civil Engineering 36	..	1
Elective	..	3	Civil Engineering 40, Thesis	..	2
			Elective	..	3
Total		18	Total		18

Courses of Instruction

VI. English
XXVI. Geology
XXVII. Mineralogy
XXVIII. Chemistry
XXIX. Physics
XXXI. Mathematics
XXXII. Mining and Metallurgy
XXXIII. Mechanical Engineering
XXXIV. Electrical Engineering
XXXV. Mechanic Arts
XXXVI. Civil Engineering
XXXVII. Drawing
XXXVIII. Military Science and Tactics

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. PAINE

Junior College Courses

1. Composition and Rhetoric. The theory of Rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters, Section 1, 9–10, Section 2, 10–11, daily. Three credits.* 5 Stewart Hall. Mr. Paine.

For description of other courses in English, see College of Arts and Science.

XXVI. GEOLOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Senior College Courses

21. GENERAL GEOLOGY. The first semester's work deals chiefly with the dynamic and structural aspects of the subject, being a general discussion of geologic forces and their results. During the second semester an outline is given of the history of the earth, including diastrophic changes, stratigraphic relationships, and the description of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *First semester, 10–11, M. W. F. Three credits. Second semester, 10–11, M. F. Two credits.* Mackay Mining Building. Professor Smith.

22. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisite:* Geology 21, Mineralogy 1a, 1b, and 3. *Second semester, 1–2, T. Th. Two credits.* Mackay Mining Building. Professor Smith.

23*a*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30, T. One credit.* Mackay Mining Building. Professor Smith.

23*b*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen, and in thin section with the microscope. *Prerequisite:* Mineralogy 24 and 25, and Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30, T. One credit.* Mackay Mining Building. Professor Smith. Deposit, $5.

24*a*. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 21. *Second semester. One credit.* Professor Smith and Assistant Professor Jones.

24*b*. FIELD GEOLOGY. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably some mining camp where both the surface and the underground geology may be investigated. The field for 1911 was in the vicinity of Yerington, Nevada. A concise report of the work, together with well-kept field notes, a finished geo-

logical map and cross-sections, is required of each member of the class. *Prerequisite:* Geology 21, 22, and 24a. *Three credits.* Mackay Mining Building. Professor Smith and Assistant Professor Jones.

24*c*. FIELD GEOLOGY. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspect of the work will be given. *Prerequisite:* Geology 24b. *First semester. Hours to be arranged. One credit.* Mackay Mining Building. Professor Smith.

25*a*. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, nonmetallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisite:* Geology 21, 22, and either 23a or 23b. *First semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Professor Smith.

25*b*. ECONOMIC GEOLOGY. A course on the general features of ore deposits, with discussion of some of the more important literature on the subject, and accompanied by the examination of abundant illustrative material. *Prerequisite:* Geology 25a. *Second semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Professor Smith.

27. PALEONTOLOGY. A brief laboratory course in elementary paleontology. *Second semester. Hours to be arranged. One credit.* Mackay Mining Building. Professor Smith.

40. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Smith.

60. GRADUATE COURSE. The original investigation of geologic problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith.

For description of other courses in Geology, see College of Arts and Science.

XXVII. MINERALOGY

PROFESSOR SMITH, ASSISTANT PROFESSOR JONES

Junior College Courses

1*a*. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by

means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

1*b*. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisite:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–4:30, W. Two credits.* Mackay Mining Building. Professor Smith.

24. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisite:* Mineralogy 1a and 1b, or 22; Physics 2 and 3. *First semester, 1–2, M. T. Two credits.* Mackay Mining Building. Professor Smith.

25. OPTICAL PROPERTIES OF MINERALS. Laboratory. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. Mineralogy 24 should be taken concurrently. *First semester, 1–4, F. One credit.* Mackay Mining Building. Professor Smith. Deposit, $5.

60. GRADUATE COURSE. To students suitably prepared opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be arranged.* Mackay Mining Building. Professor Smith and Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, ASSISTANT PROFESSOR DINSMORE, MR. ANDERSON

Junior College Courses

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have

presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Anderson. Fee, $2.50 per semester; deposit, $5.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in both gravimetric and volumetric analysis. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 3 and 4. *First semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

5*a*. ELEMENTARY FUEL ANALYSIS. Designed particularly for mechanical engineers. *First semester, 2–4:30, Th.* Chemistry Building. Professor Adams and Professor Dinsmore.

6. QUANTITATIVE ANALYSIS. Special determinations in Analytical Chemistry will be assigned to meet the demands of the individual students and the departments in which the degree is sought. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

For description of other courses in Chemistry, see College of Arts and Science.

XXIX. PHYSICS

PROFESSOR HARTMAN, MR. ———

Junior College Courses

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition, but with a deficiency in this subject. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely qualititative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurements. *Prerequisite:* Plane Geometry. A knowledge of Trigonometry also is desirable. *Both semesters. Lectures 10–11, daily; Laboratory, 2–4:30, F. Eight credits.* 5, 6, and 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisite:* Mathematics 1 and 7; Physics a or Physics 1. *Both semesters, 9–10, daily. Ten credits.* 5, 6, and 11 Physics Building. Professor Hartman.

3. PHYSICAL MEASUREMENTS. Experimental work in heat and mechanics, sound and light, and electricity and magnetism of distinctly quantitative character is done. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisite:* Mathematics 1 and 7; Physics 1. *Both semesters, 2–4:30, W. Th. Four credits.* 5 and 6 Physics Building. Professor Hartman. Fee, $2 per semester; deposit, $5.

Senior College Courses

21. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. One hour each week will be devoted to discussion and recitation. *Prerequisite:* Physics 1, 2, and 3. *First semester, 2–4:30, T. W. One or two credits.* 5 and 6 Physics Building. Professor Hartman and Mr. ———. Fee, $2 per semester; deposit, $5.

40. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

For other courses in Physics, see College of Arts and Science.

XXXI. MATHEMATICS

PROFESSOR HASEMAN, MR. ———

Junior College Courses

7. ALGEBRA AND ANALYTIC GEOMETRY. Through review of algebra and trigonometry; advanced parts of the algebra to suit the needs of the students; geometry of the point, straight line, transformation of coordinates, conic sections, and the general equation of the second degree. Some time will be spent on the analytic geometry of the three dimensions. *Both semesters, 9–10. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A through study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, inde-

terminate forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester, 10–11. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of plane curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester, 10–11. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

20. ANALYTIC MECHANICS. Work in the resolution of forces, center of gravity, moment of inertia, laws of motion, friction, and dynamics of machinery. Emphasis is placed on practical numerical examples to illustrate the theory. *Both semesters, 8–9. Six credits.* 107 Morrill Hall. Professor Haseman.

21. MECHANICS OF MATERIAL. Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *Both semesters, 8–9. Four credits.* 107 Morrill Hall. Professor Haseman.

For description of other courses in Mathematics, see College of Arts and Science.

XXXII. MINING AND METALLURGY

PROFESSOR YOUNG, MR. PALMER

Senior College Courses

21. MINING (General). Excavation, explosives, tunneling, boring, shaft-sinking. *First semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

22. MINING (General). Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, mine equipment and management. *Second semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

23*a*. MINING (Laboratory). Problems in engineering and in the design of mining and metallurgical machinery. *First semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor Young.

23*b*. MINING (Laboratory). Continuation of Mining 23*a*. *Second semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor Young.

24. MINING (Laboratory). Practice in sharpening and tem-

pering hand and machine drills, in the use of these, and in forging and welding. *First semester (alternate years). Hours to be arranged. Two credits.* Mining Laboratory and Forge Shop. Professor Young.

25. EXCURSIONS. During the year two trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit, The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formation is also done in order to facilitate interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide, and reduction plants. Reports of observations, with sketches, are required of each student. (For Seniors, School of Mines.) Professor Young.

26. ENGINEERING CONTRACTS AND SPECIFICATIONS. *Second semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Professor Young.

27. METALLURGY (General). Lectures and recitations. Physical properties of the more important metals and alloys; physical properties of the structural metals and alloy steels; the metallographical study of steels. *Prerequisite:* Chemistry 1, 2, 3; Mineralogy 1. *Both semesters. Four credits.* Lecture Room, Mackay Mining Building. Professor Young and Mr. Palmer.

28. METALLURGY (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *First semester, 10–11, M. T. Th. F. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

29. METALLURGY (Copper, Lead, Zinc). Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *Second semester, 10–11, M. T. Th. F. Four credits.* Lecture Room, Mackay Mining Building. Professor Young.

30. METALLURGY (Laboratory). A series of experiments is given which is designed to supplement, in part, the class-room work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to

supplement the small-scale experiments. *Prerequisite:* Metallurgy 27; Chemistry 5 and 6. *First semester, 2–4:30, W. Th. Second semester, 2–4:30, Th. F. Four credits.* Metallurgical Laboratory, Mackay Mining Building. Professor Young. Fee, $10 per semester.

31*a*. ASSAYING. Lectures and recitations. Methods of assaying, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying. *Prerequisite:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Mr. Palmer.

31*b*. ASSAYING. Lectures and recitations. Chemistry in assay slags and slag calculation. Full discussion of the assay of difficult ores and metallurgical products, the fire assay of lead, platinum, bismuth, tin, and mercury, the errors and losses in fire assay. *Second semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Mr. Palmer.

32. ASSAYING (Laboratory). Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miner's pan, horn, and batea. *Prerequisite:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. One credit. Second semester. Two credits. Hours to be arranged.* Assaying Laboratory, Mackay Mining Building. Mr. Palmer. Fee, $5 for first semester; for second semester, $7.50.

33. FIRST AID AND HYGIENE. Four lectures. Required of all Seniors, School of Mines. *Second semester. Hours to be arranged.* Professor Frandsen.

34. MINING LAW. Four lectures. *Second semester. Hours to be arranged.*

35. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work must cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations, and to put at least one whole vacation period into practical work.

36. MINING CONFERENCE. Discussion of laboratory and classroom work; technical literature, student papers and quizzes. Credit one unit. *Both semesters. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Young.

37. METALLURGICAL CALCULATIONS. A discussion of the principles of thermo-chemistry and a series of problems illus-

trating them. *Elective. Second semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Mr. Palmer.

38. The purchase, installation and operation of mining and metallurgical machinery. *Elective. Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professsor Young and Mr. Palmer.

39. MILL AND SMELTER ANALYTICAL METHODS. *Elective. First semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Mr. Palmer.

40. THESIS. Each Senior student is required to present a thesis on some subject in mining or metallurgy or related branch of Engineering. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Young.

XXXIII. MECHANICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. POWERS

Junior College Courses

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers. *First semester, 1–2, T. Th. Two credits.* Electrical Building. Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits.* Electrical Building. Mr. Powers.

Senior College Courses

23. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *Second semester, 9–10, T. Th. Two credits.* Electrical Building. Mr. Powers.

24. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horsepowers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 1–2, M. One credit.* Professor Scrugham.

25. THERMODYNAMICS. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10. M. W. Th. F. Four credits.* 101 Mechanical Building. Mr. Powers.

26. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases and oil is discussed, and comparative cost and efficiencies considered. *First semester, 10–11, M. W. Two credits.* Electrical Building. Professor Scrugham.

27. POWER PLANTS. Mechanical engineering of power plants is presented in a nonmathematical way, and the practical and experimental side of machinery appliances and economical auxiliaries employed are shown. *Second semester, 10–11, T. Th. Two credits.* Electrical Building. Professor Scrugham.

28. VALVE GEARING. A study of the various forms of engine valves, link motions, radical gears, and shaft regulation. Each student must design some form of standard engine-valve and governor, the data being taken from trade catalogues and engines actually in use. *Second semester, 1–2, 2–4:30, F. Two credits.* Electrical Building. Mr. Powers.

30. ENGINEERING LABORATORY PRACTICE. This course covers the various methods of conducting and working up tests, determining efficiencies, driving powers, etc., and is supplemented by practical tests on a number of pieces of apparatus. *First semester, 1–2, 2–4:30, Th. Two credits.* 101 Mechanical Building. Professor Scrugham, Mr. Powers, Mr. Preston.

31. ADVANCED LABORATORY PRACTICE. This course consists of an extended series of experimental tests on power plants, locomotives, etc. *Elective. Hours to be arranged. One credit.* Professor Scrugham.

40. THESIS COURSE. The designing of a machine or the original investigation of some subject congenial to the student's taste and included in the scope of curriculum. *Second semester. Hours to be arranged. Two credits.* 202 Mechanical Building. Professor Scrugham.

XXXIV. ELECTRICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. POWERS

Junior College Courses

1. ELEMENTS OF ELECTRICAL ENGINEERING. Includes a discussion of the laws and properties of electric and magnetic

circuits, followed by an introduction to the study of direct and alternating-current machinery. *Second semester, 1–2, T. Th. Two credits.* Electrical Building. Professor Scrugham.

Senior College Courses

21. DIRECT-CURRENT MACHINERY. Fundamental principles, theory, characteristics, operation, and construction of dynamos, motors, storage batteries, etc., supplemented by laboratory work. *Prerequisite:* Physics 2. *First semester, 10–11, M. W. F. Three credits.* 101 Mechanical Building. Professor Scrugham.

22. ALTERNATING-CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* Electrical Engineering 21. *Second semester, 10–11, M. W. F.* Electrical Building. Professor Scrugham.

23. APPLIED ELECTRICITY. Application of electricity to machine tools, pumps, cranes, telephony, etc. *First semester, 10–11, M. W. Two credits.* Electrical Building. Mr. Powers.

24. ELECTRIC RAILWAYS AND TRANSMISSION. Covers the construction, equipment, and operation of different types of electric roads, together with related problems of power transmission and generation. *Prerequisite:* Electrical Engineering 22. *Second semester, 9–10, M. W. Two credits.* Electrical Building. Professor Scrugham.

25. ELECTRICAL ENGINEERING LABORATORY. The use and care of electrical instruments. Test of generators, motors, etc. *Both semesters, 2–4:30, M. W. One to four credits.* Mr. Powers.

26. ELECTRICAL ENGINEERING LABORATORY. A continuation of the preceding course, but dealing particularly with more advanced problems in alternating-current engineering. *Both semesters, 2–4:30, M. W. One to four credits.* Electrical Building. Professor Scrugham, Mr. Powers.

XXXV. MECHANIC ARTS

MR. POWERS, MR. PRESTON

Junior College Courses

1. WOOD WORK. The students are taught the use of hand and machine tools and the most approved processes and methods followed in engineering construction. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenter's tools. The wood turning involves the various principles of lathe work

in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. *Both semesters, 2–4:30, M. T. Four credits.* 201 Mechanical Building. Mr. Powers. Fee, $2 per semester.

2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case-hardening, and the making of a complete set of machine cutting tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, M. T.; Section 2, 8–12, S. Four credits.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface chipping, squaring, and fitting, round filing, sawing, scraping, and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel and file; the laying out of work and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, M. T. Four credits.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

4. FOUNDRY PRACTICE. Instruction is given in molding, core-making, and casting in brass and iron. Practically all of the castings used in the machine shop are made by the students in this course. *Both semesters. Hours and credits to be arranged.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

XXXVI. CIVIL ENGINEERING

PROFESSOR BOARDMAN, MR. ANDERSON

Senior College Courses

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room, in land

surveying, topography, hydrography, mining, and city surveying. *Both semesters. Recitations or lectures, 1–2; Field or drafting, 2–4:30, T. Th. Eight credits.* Electrical Building. Professor Boardman. Deposit, $5.

23. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester. Hours to be arranged. Four credits.* Electrical Building. Professor Boardman.

24. STRUCTURAL DESIGN. General features and detail of design, estimates of weight, and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester. Hours to be arranged. Drafting, four credits; lecture, one credit.* Electrical Building. Professor Boardman.

25. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester. Hours to be arranged. Field or drafting, 2–4:30, M. W. Five credits.* Electrical Building. Professor Boardman. Deposit, $5.

26. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester. Hours to be arranged. Three credits.* Electrical Building. Professor Boardman.

27. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and estimates its cost. *Second semester. Lecture, two credits; drafting, one credit.* Electrical Building. Professor Boardman.

27*a*. MASONRY CONSTRUCTION. Additional work, drafting or laboratory testing. *Hours to be arranged. One to three credits, depending upon the time put in and the work done.* Electrical Building. Professor Boardman.

28. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water, and the laws of its flow through openings and in channels of various kinds. *First semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

29. GRAPHIC STATICS. A study of the principles of graphic

in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. *Both semesters, 2–4:30, M. T. Four credits.* 201 Mechanical Building. Mr. Powers. Fee, $2 per semester.

2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case-hardening, and the making of a complete set of machine cutting tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, M. T.; Section 2, 8–12, S. Four credits.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface chipping, squaring, and fitting, round filing, sawing, scraping, and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel and file; the laying out of work and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, M. T. Four credits.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

4. FOUNDRY PRACTICE. Instruction is given in molding, core-making, and casting in brass and iron. Practically all of the castings used in the machine shop are made by the students in this course. *Both semesters. Hours and credits to be arranged.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

XXXVI. CIVIL ENGINEERING

PROFESSOR BOARDMAN, MR. ANDERSON

Senior College Courses

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room, in land

surveying, topography, hydrography, mining, and city surveying. *Both semesters. Recitations or lectures, 1–2; Field or drafting, 2–4:30, T. Th. Eight credits.* Electrical Building. Professor Boardman. Deposit, $5.

23. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester. Hours to be arranged. Four credits.* Electrical Building. Professor Boardman.

24. STRUCTURAL DESIGN. General features and detail of design, estimates of weight, and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester. Hours to be arranged. Drafting, four credits; lecture, one credit.* Electrical Building. Professor Boardman.

25. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester. Hours to be arranged. Field or drafting, 2–4:30, M. W. Five credits.* Electrical Building. Professor Boardman. Deposit, $5.

26. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester. Hours to be arranged. Three credits.* Electrical Building. Professor Boardman.

27. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and estimates its cost. *Second semester. Lecture, two credits; drafting, one credit.* Electrical Building. Professor Boardman.

27*a*. MASONRY CONSTRUCTION. Additional work, drafting or laboratory testing. *Hours to be arranged. One to three credits, depending upon the time put in and the work done.* Electrical Building. Professor Boardman.

28. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water, and the laws of its flow through openings and in channels of various kinds. *First semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

29. GRAPHIC STATICS. A study of the principles of graphic

statics and their application in ascertaining the stresses in framed structures. *First semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman and Mr. Anderson.

29*a*. GRAPHIC STATICS. Additional work in graphics of bridge trusses. *One to three credits, depending upon work done.* Electrical Building. Professor Boardman.

30. WATER SUPPLY. A study of public water supplies and their sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

31. IRRIGATION ENGINEERING. A thorough study of the questions involved in the collection, storage, and distribution of water for irrigation purposes. *Second semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

32. MINE SURVEYING. At the close of the college year the Junior Class in Surveying takes a four weeks' trip to some mining district in Nevada. Both underground and surface surveying is carried on and maps are made from these surveys. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. *Four weeks. Three credits.* Professor Boardman.

33. REINFORCED CONCRETE. Its principles and applications. *First semester—Lecture, two credits, drafting, one credit. Second semester—Lecture, one credit; drafting, two credits.* Electrical Building. Professor Boardman.

34. WATER POWER ENGINEERING. A study of the more important problems of water-power development including characteristics of hydraulic motors affecting design, selection and installation. *Hours to be arranged. Three credits.* Electrical Building. Professor Boardman.

35. RURAL ENGINEERING. Road building and maintenance; farm drainage; the construction of farm buildings and the use of concrete in farm construction. *Prerequisite:* C. E. 21. *Second semester. Recitations or lectures, 1–2, field or drafting, 2–4:30, W. F.* Electrical Building. Professor Boardman. Deposit, $5.

36. READING. Reading and discussion of current engineering literature. *Hours to be arranged. One credit.* Professor Boardman.

40. THESIS. *Second semester. Two credits. Hours to be arranged.* Professor Boardman.

XXXVII. DRAWING

PROFESSOR SCRUGHAM, PROFESSOR BOARDMAN, ASSISTANT PROFESSOR LEWERS, MR. POWERS, MR. PRESTON, MR. ANDERSON

Junior College Courses

1. FREEHAND DRAWING. Perspective sketches of machines; lettering; sketches of projections of machines. *First semester, 10–11, daily. Two credits.* Physics Building. Assistant Professor Lewers.

2. MECHANICAL DRAWING. Plates, machine parts, etc. *First semester. Section 1, 9–10, Section 2, 10–11, daily. One credit.* Physics Building. Assistant Professor Lewers.

3. ELEMENTARY MACHINE DESIGN. Drawing and design of machine parts, modern shop arrangement, etc. *Second semester, 9–10 and 10–11, daily. Three credits.* Mr. Preston.

3a. TOPOGRAPHICAL DRAWING AND MAPPING. *Second semester. Hours to be arranged. One credit.* Electrical Building. Professor Boardman, Mr. Anderson.

4. DESCRIPTIVE GEOMETRY. *Second semester, 8–9, daily. Two credits.* Mr. Powers.

Senior College Courses

25. MACHINE DESIGN. *First semester, 2–4:30, M. W. F. Three credits.* Electrical Building. Professor Scrugham.

26. STEAM BOILER DESIGN. *Second semester, 2–4:30, M. W. F. Three credits.* Electrical Building. Professor Scrugham.

27. ADVANCED MACHINE DESIGN. *Both semesters, 2–4:30, M. W. F. One to three credits.* Electrical Building. Professor Scrugham.

28. ELECTRICAL DESIGN. *Second semester, 2–4:30, T. Th. F. One to three credits.* Electrical Building. Professor Scrugham.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

[1]For exceptions, see organization of Battalion of Cadets, p. 73.

Junior College Courses

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Two months' course during winter, 11–12, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months' course during winter, 11–12, F. One-half credit.* 108 Morrill Hall. Captain Applewhite.

[1]For exceptions, see organization of Battalion of Cadets, p. 73.

COLLEGE OF EDUCATION

COLLEGE OF EDUCATION

FACULTY

JOSEPH EDWARD STUBBS.....President
ROBERT LEWERS.....Vice-President, Professor of Elementary and International Law
JAMES EDWARD CHURCH, JR.....Professor of the Latin Language and Literature
LAURA DE LAGUNA....Professor of the Romanic Languages and Literatures
JEANNE ELIZABETH WIER.....Professor of History and Political Science
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY.....Professor of Botany, Horticulture and Forestry
ROMANZO ADAMS.....Professor of Economics and Sociology
W. S. TANGIER SMITH[1].....Professor of Geology and Mineralogy
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
LOWE ABEEL MCCLURE[2].....Professor of Military Science and Tactics and Instructor in Physical Training for Men
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON[3].....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics
JOHN CALVIN WATSON.....Professor of the Greek Language and Literature
GEORGE ORDAHL.....Professor of Education and Psychology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
REUBEN CYRIL THOMPSON.....Associate Professor of Latin and Greek Languages and Literatures
KATE BARDENWERPER.....Assistant Professor in Domestic Science
SANFORD CROSBY DINSMORE.....Assistant Professor of Agricultural Chemistry
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GUSTAVUS SWIFT PAINE.....Instructor in English
HELEN ANN MEIGHAN.....Instructor in Physical Education for Women
EDWARD R. VON JANINSKI.....Instructor in German
GRACE ALICE DAY.....Supervisor of Training
MABEL A. JONES.....Instructor in Vocal Music
CHARLES LEROY BROWN.....Assistant in Biology
WALTER WILLIAMS ANDERSON.....Assistant in Chemistry
AUGUST HOLMES.....Student Assistant in Mathematics

[1]Absent on leave, 1912–13. [2]Detail expires, May 31, 1912. [3]Absent on leave, 1911–13.

ORGANIZATION

The general purpose of the College of Education is to organize and correlate the different forces of the University which may contribute to educational efficiency in the State of Nevada. This is done through the grouping of University courses, through the Training School, and through the Summer School.

THE TRAINING SCHOOL

The College of Education conducts its training school in connection with the Reno Public Schools, through the courtesy of the Board of Education and of City Superintendent of Schools B. D. Billinghurst. Each student participates in three distinct types of experience: (*a*) practice-teaching in the various elementary school subjects throughout the year; (*b*) observation of the work of the regular grade teachers; (*c*) taking full charge of a room during the absence of the regular teacher for periods varying from a half day to a week or more. All of this work is carefully planned and supervised.

SUMMER SCHOOL

Beginning with the latter part of June, 1912, the University will conduct a Summer School six weeks in length. The aim of this Summer School will be to supply the teachers of the State of Nevada with courses needful in their work. Courses will be offered in Theory and Practice, Psychology, Industrial Arts, Methods, Observation, and practice in a model school.

COURSES OF STUDY

Two courses of study are offered in the College of Education:

1. An elementary or Junior College course of two years designed to prepare teachers to teach in elementary schools.

2. An advanced or Senior College course of two years designed to prepare teachers to teach in high schools.

CONDITIONS OF ADMISSION

1. Entrance to the College of Education shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the College of Education must pass an examination in English composition, whether from the accredited school or not. The examination will be held in August of each year.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons the Committee on Admission and Advanced Standing, in consultation with the adviser, may make exceptions to this rule.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

4.	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to the College of Education, the candidates must present:

1. English a and b.
2. Mathematics a and b.
3. Four units—either (a), (b) or (c) as given below:
 (a) Latin, 4 units.
 (b) History, 2 units; Language other than English, 2 units.
 (c) Mathematics c; Science, 1 unit; Language other than English, 2 units.
4. Elective, 7 units.

REQUIREMENTS FOR GRADUATION

JUNIOR COLLEGE

Students who satisfy the entrance requirements and who complete the work of the Junior College as outlined in the following table will be graduated with the title Associate, and will receive diplomas entitling the holders to State teachers' certificates of elementary grade.

FIRST YEAR	1st Sem.	2d Sem.
Education 1	3	3
Hygiene 1	4	4
English 1	3	3
Art 5a	1	1
Music 1	1	1
Elective	3	3
Total	15	15
SECOND YEAR		
Education 5	2	2
Education 3	5	5
Art 5a	1	1
Music 2	1	1
Elective	6	6
Total	15	15

NOTE—All students expecting to teach in the grades should elect History 26. Students who have not had a full year's work in high-school geography should elect Geology 26.

SENIOR COLLEGE

ENTRANCE REQUIREMENTS

Graduates of the Junior College of Education shall be eligible to enter the Senior College. Graduates of the Junior College of the College of Arts and Science and of the Junior College of the College of Agriculture shall be eligible to enter the Senior College of the College of Education, provided they shall have taken Hygiene 1, 8 units, and Psychology 1 and 2, 6 units.

Students coming from other institutions of learning may gain admission by meeting the same or equivalent requirements.

Students doing their major work in Education should take the courses in the following order:

First Year—Some Biological Science.
Second Year—Psychology 1 and 2.
Third Year—Psychology 21 or 22, or Education 22.
Fourth Year—Education 3.

DIPLOMAS AND DEGREES

Students who satisfy the entrance requirements and who complete the work of the Senior College as outlined below will be graduated and will receive diplomas entitling them to State teachers' certificates of the high-school grade.

The work is so arranged that a student may register in both the College of Education and in the College of Arts and Science. A student who complies with the demands of both colleges may be graduated and receive a diploma from both. A student who

is graduated from both shall receive but one degree—the Degree of Bachelor of Arts from the College of Arts and Science. A student who graduates from the College of Education only, will receive the Degree of Bachelor of Science in Education.

SPECIAL COURSES

Special courses in music, drawing and physical culture will be given for students who wish to prepare for such special work. Only persons who have natural aptitude for such work, and who have had some training along these lines will be permitted to undertake special courses. Anyone desiring this work should communicate with the College of Education in advance.

CORRESPONDENCE COURSES

The courses in Education and Psychology may be taken by correspondence. Credit will be given according to the amount of work done. Teachers wishing to enroll should address:

College of Education,
University of Nevada,
Reno, Nevada.

REQUIREMENTS FOR RECOMMENDATION IN HIGH-SCHOOL SUBJECTS.

The minimum amount of work required in each of the following subjects in order to receive from the University a recommendation for teaching those subjects in high schools is as follows:

Mathematics—Eleven units, based on four years of high-school study, or seventeen units based on two or three years of high-school study.

Latin—Fourteen units, including prose composition, based on four years of high-school study.

French—Courses 1, 2, 3, and 4, based on no entrance French.

German—Courses 1, 2, 4, and 5, based on no entrance German.

English—Eighteen units, based on two or more years of high-school work.

History—Courses 1 and 2 and further work amounting to eight units. This requirement will be reduced in the case of students whose high-school preparation is good.

Biology—Sixteen units, including Hygiene 1.

Physics—Twelve units, based on one year of high-school work.

Chemistry—Courses 2 and 4, based on one year's high-school work.

COURSE OF STUDY

The course of study includes, in addition to the requirements of Military Science or Physical Education for Women, work aggregating 120 semester-units[1] credit as follows:

1. Ten units in education.
2. Sufficient work in at least two important high-school subjects to secure from the University a teacher's recommendation for those subjects.
3. Elective—The student must elect in two departments not fewer than twenty-four nor more than thirty-six units, and not more than twenty-four units shall be in any one department. Courses in the College of Education, in the College of Arts and Science, and in the Departments of Agriculture and Horticulture will be accepted as meeting this requirement. (The choice between twenty-four and thirty-six units and between twelve and twenty-four units rests with the student.)
4. Free Elective—The remaining units necessary to make a total of sixty units may be freely elected from the courses offered in the College of Arts and Science and in the College of Agriculture, and from courses in Mineralogy, Metallurgy, Assaying, Agricultural Chemistry, and Surveying, provided the requirements as to prerequisites in the various departments are met.

COURSES OF INSTRUCTION

The courses in Psychology and in Education, and other required courses are as follows:

VI. English	XIV. Psychology
VII. Music	XVI. Hygiene
VIII. Art	XXXVIII. Military Science and Tactics
XIII. Education	XL. Physical Education for Women

VI. ENGLISH LANGUAGE AND LITERATURE

MR. PAINE

Junior College Courses

1. Composition and Rhetoric. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily

[1] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

and weekly themes. *Both semesters. Section 1, 9–10, Section 2, 10–11, daily. Six credits.* 102 Stewart Hall. Mr. Paine.

VII. MUSIC

MISS JONES

Junior College Courses

1. PUBLIC SCHOOL MUSIC. Sight singing, ear training, rhythm study, part singing, elementary vocal instruction. *Hours and credits to be arranged.* 206 Morrill Hall. Miss Jones.

2. PUBLIC SCHOOL MUSIC. Talks on child voice; study of plans and songs used in all grades of some of the best schools. Vocal instruction continued. *Hours and credits to be arranged.* 206 Morrill Hall. Miss Jones.

3. VOCAL INSTRUCTION. Voice training, breath control, enunciation, and study of songs of all grades. *Hours and credits to be arranged.* 206 Morrill Hall. Miss Jones.

4. UNIVERSITY CHORUS. Singing and interpretation, including correct phrasing, diction, and the principles of voice production. Study of some high-class choral work or part songs to be given during the year with orchestral accompaniment. *Hours to be arranged.* Miss Jones.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Junior College Courses

5*a*. TEACHERS' COURSE. Pictorial representation. Perspective figure and animal drawing. Design. Historic ornament. *Hours and credits to be arranged.* Physics Building. Assistant Professor Lewers.

5*b*. TEACHERS' COURSE. Continuation of first-year course in all branches and its application to each grade in public school work.

XIII. EDUCATION

PROFESSOR ORDAHL, MISS DAY

Junior College Courses

1. SCIENCE OF EDUCATION. This course is designed to give the background and scientific basis for practice work in Course 3 in Education. The first semester is devoted to the study of elementary principles of psychology in relation to education. In the second semester a more detailed study is made of the learning process. *Both semesters, 10–11, M. W. F.* 101 Stewart Hall. Professor Ordahl, Miss Day.

3. THEORY AND PRACTICE OF TEACHING. Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussion, and private conferences.

(*a*) One hour daily throughout the year is devoted to practice teaching by every student. This includes four units of work, for periods of seven weeks each, in the following subjects: Elementary school English, geography, history, arithmetic. Additional subjects may be arranged if desired. Carefully prepared general and daily lesson plans are submitted to the supervisor and regular grade teacher by the student-teacher before taking charge of a class. After each lesson the student-teacher meets the supervisor in private conference for criticism and suggestions.

(*b*) Two hours each week are spent by the class with the supervisor, observing lessons taught by the city teachers in the various elementary school subjects. These are made the basis of class discussions upon principles and methods of teaching.

(*c*) Three hours each week are devoted to the study of school problems, principles of teaching, and special methods in elementary school English, geography, history, and arithmetic, paralleling the practice teaching.

Only those students who show a disposition to do their best and who are able to achieve reasonable success in teaching will be permitted to continue in this course. From time to time the stronger students are given opportunity to test their power by substituting for the regular teachers in the city schools in case of sickness. Upon such occasions the student assumes the entire responsibility of the work until the return of the regular teacher, unless this period exceeds one week. *Prerequisite:* Education 1. *Both semesters, 8–9, M. W. F.; 10–11, T. Th., and from 9–10, every day. Ten credits.* Orvis Ring School Building. Miss Day.

NOTE—Education 3 is also open to Senior College students. See same under Senior College Courses.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Psychology 5.) Lectures, readings, observation, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. (Psychology 21.) This course deals with the development of the thought process, the formation of ideals, and the social nature of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl. (*Not given 1912–13.*)

23. HISTORY OF EDUCATION. A study of the development of educational ideals from the time of the Greeks and Hebrews to the present, with special reference to the forces which have operated in the evolution of the various historic ideals and practices. *Both semesters, 9–10, M. W. F. Six credits.* 101 Stewart Hall. Professor Ordahl.

3. THEORY AND PRACTICE OF TEACHING. (See Education 3, Junior College Courses.) Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observation of model lessons, class discussions, and private conferences. *Prerequisite:* Education 21, or Psychology 1 and 3. *Both semesters, 8–9, M. W. F., 10–11, T. Th., and any hour from 9 to 3 for practice teaching.* Orvis Ring School Building. Miss Day.

XIV. PSYCHOLOGY

Junior College Courses

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes, and the emotional life. *Prerequisite or parallel:* Hygiene 1, or Zoology 5. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings and laboratory work. A comparative study is made of the most recent experimental work on the genesis and function of consciousness in animal and human behavior. *Second semester. Lectures, 8–9, M. W. F. Laboratory, two one-hour periods per week, 1–2 or 2–3, T. Th. Three credits.* 101 Stewart Hall. Professor Ordahl.

NOTE—Psychology 1 and 3 should be taken in the Sophomore year.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Education 5.) Lectures, readings, observation, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization

of school activities. *Prerequisite*: Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. (Education 21.) This course deals with the development of the thought process, the formation of ideals, and the social nature of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl. (*Not given 1912–13.*)

22. GENETIC AND SOCIAL PSYCHOLOGY. A study of human behavior through the various stages of civilization, with special reference to the analysis of the psychic factors underlying the evolution of typical moral, ethical, and esthetic ideals. *Prerequisite:* Psychology 1 and 2. *Both semesters. Hours to be arranged. Four credits.* (This course will alternate with Education 21.) 101 Stewart Hall. Professor Ordahl.

XVI. HYGIENE

PROFESSOR FRANDSEN, MR. BROWN

Junior College Courses

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures 8–9, T. Th. Laboratory, 2–4:30, T. F. Four credits.* 301 Hatch Hall. Professor Frandsen and Mr. Brown. Fee, $2 per semester; deposit, $2.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

[1]For exceptions, see organization of Battalion of Cadets, p. 73.

Junior College Courses

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Two months' course during winter, 11–12, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months' course during winter, 11–12, F. One-half credit.* Captain Applewhite.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS MEIGHAN

NOTE—This course is offered to all young women of the University, and is required in the Freshman and Sophomore years as part of the regular work. Two (or three) hours each week are required of all students taking the course. Upon entering the class students are carefully examined by a physician with particular attention to the lungs and heart action, and information concerning the general health and any inherited tendencies is solicited. Physical measurements are taken in the fall and again in the spring. The aim is to develop a strong and symmetrical physique with an easy and graceful poise of the body. Systematic exercises, with the aid of a well-equipped gymnasium, make it possible to obtain these results. Women taking this course will be obliged to provide themselves with gymnasium suits, consisting of blouse-waist and bloomers, and regulation shoes. All suits must be of dark-blue material. In addition to the regular class work, sports and pastimes will receive their proper amount of attention.

A deposit of 50 cents at the beginning of the year is required of all students, the same to be returned at the close of the year to students returning keys to lockers.

1. CALISTHENICS. Free work, wands, Indian clubs, bar-bells, dumb-bells, bounding balls, march tactics, elementary folk and national dances, games, as basket-ball, captain ball, indoor baseball, handball and tennis. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

2. ADVANCED SWEDISH AND GERMAN GYMNASTICS, advanced folk and national dances, advanced work in clubs, bar-bells, and dumb-bells; light apparatus work; the horse; parallel bars, mat and buck; games, tennis, basket-ball and indoor

[1]For exceptions, see organization of Battalion of Cadets, p. 73.

baseball. *Both semesters. Hours to be arranged.* Gymnasium. Miss Meighan.

A course in Physical Education, consisting of one hour a week in the evening, will be open for women who cannot attend class during the day. *Hours to be arranged.* Gymnasium. Miss Meighan.

One credit is given for work in the Department of Physical Education.

ROSTER OF STUDENTS

September, 1911—March, 1912

RECIPIENTS OF SCHOLARSHIPS AND HONORS

THE UNIVERSITY GOLD MEDAL
Walter Cameron Harris
Mackay School of Mines

THE F. O. NORTON SCHOLARSHIP
Donald C. Cameron
Mackay School of Mines

THE SCHOLARSHIP FROM A FRIEND OF THE UNIVERSITY
Robert Perry Farrer
School of Arts and Science

REGENTS' SCHOLARSHIPS
Eunice A. Cagwin
School of Arts and Science

Millie Donahue
School of Arts and Science

William I. Smyth
Mackay School of Mines

PRESIDENT'S SCHOLARSHIP
Augusta Brusso
Normal School

THE PHILO C. BENNETT SCHOLARSHIP
(Not awarded, 1911)

HONOR STUDENTS

Graduate Students—Frances Dorothy Parker.

Seniors—Florence Leslie Bray, Agnes Claire Mead.

Juniors—Dan. E. Bruce, Donald C. Cameron, Helen R. Hobbins, Louise Mabel Lenahan, Ethel R. Thompson.

Sophomores—Helen B. Higgins, Eunice A. Cagwin.

NOTE—Carrie Edith Linsea received a scholarship in 1910, but her name was inadvertently omitted from the Register for 1911.

GRADUATES

Diplomas and Degrees were awarded on Commencement Day, May 17, 1911, as follows:

DOCTOR OF LAWS
Frank H. Norcross

MASTER OF ARTS
Beulah Hershiser (August 14, 1911)

MINING ENGINEER
Jay Arnold Carpenter '07 — James Jason Hart '07
Cassius Crowell Smith '05

CIVIL ENGINEER
Bonnifield Gerald McBride '06

BACHELOR OF ARTS
Florence Leslie Bray — Agnes Claire Mead
Cora Mildred Cleator — Gertrude Beatrice Pike
Vera Ellen Hasch — Harriett Howell White

BACHELOR OF SCIENCE IN GENERAL SCIENCE
John Stephen Horn

BACHELOR OF SCIENCE IN MINING ENGINEERING
Ellsworth Richard Bennett — Charles Francis Hobbins
Walter Cameron Harris — Alfred Myers
Claude Henry Heise[1] — Clinton Walter Spark

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
Melvin Edward Jepson — Randall Brooks Layman
Louis Selwyn Leavitt (December 21, 1910)

BACHELOR OF SCIENCE IN CIVIL ENGINEERING
Hugo Ernest Hanser

BACHELOR OF SCIENCE IN AGRICULTURE
Cecil Willis Creel

NORMAL SCHOOL DIPLOMAS
Advanced Course
Florence Leslie Bray — Harriett Howell White
Cora Mildred Cleator — Frances Dorothy Parker
Vera Ellen Hasch — Joseph DuSang Scott
Agnes Claire Mead

Elementary Course
Marie Pearl Duncan — Norine Mary McNamara
Isabel Anastasia Merialdo

Diplomas were awarded December 20, 1911, as follows:

COLLEGE OF EDUCATION
Junior Certificate
Ethel Webster — Edna Viola Bates

[1] Degree awarded December 21, 1910.

ROSTER OF STUDENTS

GRADUATE

Church, Mrs. Florence H.	Arts and Science	Reno
Elam, Anna Sophia	Arts and Science	Reno
Fulton, Helen	Arts and Science	Reno
Parker, Frances Dorothy	Arts and Science	Ely

SENIORS

Barber, Elda Marion	Arts and Science	Reno
Breeding, Frank Owen	Mines	Portland, Ore.
Brown, Charles LeRoy	Arts and Science	Reno
Bruce, Daniel Eldred	Mines	Reno
Cafferata, Frederick J.	Mechanical Engineering	Reno
Cameron, Donald Caleb	Mines	North Platte, Neb.
Charles, William Mortimer	Agriculture	Reno
Glass, Rowena Ethel	Arts and Science	Reno
Henderson, Virgil Munro	Mines	Chico, Cal.
Hobbins, Helen Ruthven	Arts and Science	Reno
Holmes, August	Arts and Science	Battle Creek, Mich.
Jepsen, Mathilda	Arts and Science	Gardnerville
Langwith, Margaret Angela	Arts and Science	Winnemucca
Lenahan, Louise Mabel	Arts and Science	Reno
Linton, William Donald, Jr.	Mechanical Engineering	Reno
Ohmert, Hazel Mary	Arts and Science	Silver City
Pearson, Edgar Ford	Mechanical Engineering	Reno
Reed, Florence N.	Arts and Science	Edgemont
Robb, Raymond Frank	Mechanical Engineering	Tonopah
Schraps, Paul Curtis	Mines	Detroit, Mich.
Schuler, Isabel Cyril	Arts and Science	Reno
Seaton, Roland Moore	Mines	Santa Rosa, Cal.
Spencer, Raymond	Mech. Engineering	Walnut Creek, Cal.
Thompson, Ethel Ray	Arts and Science	Reno
Teel, Claude	Mines	Reno
Tibbals, Carl Lampe	Civil Engineering	Reno
Williams, Edwin Eugene	Education	Sandusky, Ohio

JUNIORS

Cagwin, Eunice Adelaide	Arts and Science	Sparks
Donohue, Millie	Arts and Science	Bodie, Cal.
Dorn, Norman Lester	Mechanical Engineering	Los Angeles, Cal.
Finney, Lynn Kelso	Mechanical Engineering	Modesto, Cal.
Frisch, Emma Elizabeth	Arts and Science	Reno
Gignoux, Frank C.	Mechanical Engineering	Reno
Hauss, Lena Elizabeth	Arts and Science	San Francisco, Cal.
Higgins, Helen Breisford	Arts and Science	Reno
Jones, Bertha Rachel	Arts and Science	Sweetwater

Layman, Harold Leslie	Civil Engineering	Reno
Lewis, Leola	Arts and Science	Reno
Mitamura, Matakichi	Arts and Science	Japan
Ogden, Chester Muir	Mechanical Engineering	Nevada City, Cal.
Patrick, Lloyd Brown	Agriculture	Reno
Reynolds, Arthur Icard	Mines	Grass Valley, Cal.
Settlemeyer, William Herman	Civil Engineering	Gardnerville
Smith, Wilhelmina	Arts and Science	Bodie, Cal.
Smither, Thomas McCourt	Mines	Reno
White, Florence Evelyn	Arts and Science	Reno
Wilson, Joseph W., Jr.	Agriculture	Nordyke
Wilson, Nathaniel	Mechanical Engineering	Reno
Winter, Edith	Arts and Science	Whiterock
Winter, Elizabeth	Arts and Science	Whiterock

SOPHOMORES

Barber, Neil Kenneth	Mechanical Engineering	Reno
Bates, Edna Viola	Education	Verdi
Blevins, Viola Marie	Education	Deeth
Bradner, Donald Byal	Mines	San Francisco, Cal.
Brennen, Alice Anna	Education	Blaine
Brusso, Augusta Harrison	Education	Sacramento, Cal.
Cole, Willie Dale	Education	Sparks
Cowgill, Philip Schuyler[1]	Arts and Science	Reno
Curler, Mollie D.	Education	Reno
Davey, Lillian Adeline	Arts and Science	Grass Valley, Cal.
DeFlon, Marie	Arts and Science	Eureka
Dickinson, Laura	Education	Wellington
Evans, Leslie	Agriculture	Reno
Farrer, Robert Perry	Arts and Science	Carson City
Finney, Mabel Consuelo	Arts and Science	Modesto, Cal.
Frazer, Gladys Echo	Arts and Science	Sparks
Gilcrease, Leonard Llewellyn	Mechanical Engineering	Lemoore, Cal.
Goldsworthy, James George	Mines	Gold Hill
Hamilton, Claude	Mechanical Engineering	Silver City
Harriman, Lester	Agriculture	Northam
Hauck, Fred Bryant	Civil Engineering	San Francisco, Cal.
Hilton, Charles Rhoads	Arts and Science	Modesto, Cal.
Jones, Gladys M.	Education	Vallejo
Kelly, Earl Eames	Arts and Science	Reno
Kelly, Isaac Judson	Arts and Science	Reno
Linsea, Carrie Edith	Arts and Science	Stillwater
Lloyd, Marie Wilder	Arts and Science	Reno
McPhail, Harvey Franklin	Mechanical Engineering	Sparks
Mahan, Grace	Arts and Science	Reno
Manion, Harold Sharp	Agriculture	Portland, Ore.
Milentz, Carl Albert	Agriculture	St. Louis, Mo.
Morrow, Nell Katherine	Arts and Science	Reno
Neasham, Myrtle Venus	Arts and Science	Sparks

[1]Name omitted from Register of 1911 in error.

Noble, Martha	Arts and Science	Elko
O'Brien, Edwina	Arts and Science	Sparks
Pennell, William	Mech. Engineering	Radersburg, Mont.
Pohl, Gertrude	Education	Austin
Rulison, Alpha	Education	Reno
Smyth, William Isaac	Mines	Reno
Sullivan, Mary Margaret	Education	Sparks
Suyemoto, Tsutomu	Mines	Japan
Tillson, Warren S.	Mechanical Engineering	Modesto, Cal.
Van Leer, Alice Ruff	Arts and Science	Elko
Webster, Ethel	Education	Reno
Webster, William Clarke	Mechanical Engineering	Reno

FRESHMEN

Abbott, Elmore Stuart	Mechanical Engineering	Modesto, Cal.
Akin, Mabel Routh	Arts and Science	Goldfield
Axt, Alberto	Arts and Science	Reno
Bacon, Chester	Mechanical Engineering	Reno
Bacon, Hazel Belle	Education	Reno
Banigan, Thomas Franklin	Arts and Science	Reno
Barton, Horace	Mechanical Engineering	Reno
Binford, Eveleen Marion	Arts and Science	Goldfield
Bird, Dorothy Jane	Arts and Science	Reno
Boggs, Arthur Samuel	Mechanical Engineering	Mason
Bower, Silvia	Education	Lamoille
Bowler, Walter Herbert	Mechanical Engineering	Tonopah
Bringham, Robert Amedee	Arts and Science	Reno
Brown, Ethel Elizabeth	Arts and Science	Reno
Bryant, Floyd Sherman	Arts and Science	Sparks
Christiansen, Corinne Louise	Education	Gardnerville
Coe, Gei	Agriculture	Fallon
Crofut, Andrew Dibble	Arts and Science	Birch
Damm, Carna H.	Arts and Science	Lovelock
DeJean, Leon	Mines	Berkeley, Cal.
Dessar, Delwyn	Mechanical Engineering	New York City
Dewar, Archibald James	Agriculture	Elko
Dickey, Mary Veronica	Arts and Science	Reno
Dondero, Fuiro Nicholas	Mines	Reno
Duddleson, William J.	Agriculture	East Ely
Ferris, Lehman Ashmead	Arts and Science	Reno
Franzman, Herbert Jay	Mines	Reno
Fulton, Margaret	Arts and Science	Reno
Golden, Francis Rauswell	Arts and Science	Reno
Hancock, John Leslie	Civil Engineering	Gold Hill
Hancock, Wallis Rae	Mechanical Engineering	Battle Mountain
Hazlett, Margaret	Arts and Science	Reno
Herz, Elsie Anna	Arts and Science	Reno
Hubbard, Edith Lorene	Education	Long Valley, Cal.

Hussman, Ada Elizabeth	Arts and Science	Minden
Hylton, Jessie Gertrude	Arts and Science	Hylton
Hylton, Leland	Agriculture	Hylton
Jones, Juanita	Arts and Science	Reno
Kent, Ira Longfellow	Agriculture	Fallon
Knight, James Q	Agriculture	Mineral Pt., Wis.
Krall, Edwin White	Arts and Science	Reno
Latapie, George	Mechanical Engineering	Reno
McCreery, George L.	Arts and Science	Carson City
McDonald, Joseph F.	Mechanical Engineering	Tonopah
McNeilly, Lois Maud	Arts and Science	Reno
McQuiston, Harold Tracy	Civil Engineering	Chico, Cal.
Marzen, Laurena Elizabeth	Arts and Science	Truckee, Cal.
Mead, Marjorie	Arts and Science	Fallon
Meffley, Alice	Education	Reno
Munk, Emma Nevada	Arts and Science	Lovelock
Newmarker, Nettie	Arts and Science	Reno
Ogilvie, George Francis	Arts and Science	Lee
O'Neill, Clara	Arts and Science	Reno
Orr, Elda Ann	Arts and Science	Reno
Ostroff, Robert Allison	Arts and Science	Reno
Painter, Waterfield	Mines	Reno
Parker, Irene Pearl	Education	Goldfield
Parks, Robert Moorman	Mines	Dayton
Parsons, Willis Beth	Mines	El Cajon, Cal.
Paterson, Chester	Mechanical Engineering	Reno
Pflaging, Adelbert	Arts and Science	Modesto, Cal.
Power, Edward James	Agriculture	East Auburn, Cal.
Price, Frances Gertrude	Arts and Science	Reno
Price, Sarah Maude	Arts and Science	Reno
Rannells, Katherine	Arts and Science	Reno
Rogers, Eleanore	Arts and Science	Berkeley, Cal.
Rudawsky, Beatrice	Arts and Science	Goldfield
Rushby, Ida Lysle	Arts and Science	Fallon
Schoen, Delphine	Education	Tonopah
Schoer, Christina	Education	Wells
Shade, Gertrude	Arts and Science	Virginia City
Sheehy, Richard Henry	Mechanical Engineering	Virginia City
Shufelt, Alson Anderson	Arts and Science	Reno
Sinai, John S.	Agriculture	Stockton, Cal.
Smith, Emma Nevada	Education	Reno
Smith, Frances P.	Arts and Science	Bodie, Cal.
Stinson, Pearl	Arts and Science	Reno
Stubbs, Ruth	Arts and Science	Reno
Swain, Earl Hazzard	Mechanical Engineering	Goldfield
Trabert, Archibald	Mechanical Engineering	Tonopah
Walker, Thomas Percy	Civil Engineering	Los Angeles, Cal.

Ware, Robert Herman	Arts and Science	Bodie, Cal.
West, Mary	Education	Yerington
White, Euleila Lane	Arts and Science	Reno
Wiley, Elmer Gilmore	Mechanical Engineering	Wellington
Williams, Josephine Gilbert	Arts and Science	Reno

SPECIALS

Adamson, Mrs. Laura Smith	Arts and Science	Reno
Anderson, Morris D.	Civil Engineering	Palo Alto, Cal.
Anderson, Walter Williams	Mines	Reno
Arnold, Fred A.	Agriculture	Goldfield
Ball, Mrs. E. D.	Domestic Science	Reno
Bartlett, George A.	Mines	Reno
Baxter, Mrs. Harold	Arts and Science	Reno
Bean, Mrs. J. P.	Arts and Science	Reno
Bell, Agnes	Arts and Science	Reno
Binns, Mrs. Dan	Domestic Science	Reno
Blumensteil, Mrs. Edith	Arts and Science	Reno
Bradley, Dita	Arts and Science	Reno
Cashin, D'Arcy, Jr.	Mines	San Francisco, Cal.
Cazier, John Ingersol	Agriculture	Wells
Ceander, Mrs. A. P.	Domestic Science	Reno
Chapman, Lloyd Gardiner	Mines	Wadsworth
Claflin, Charles Leland	Mines	Bakersfield, Cal.
Clark, Mrs. Christina W.	Arts and Science	Reno
Cowles, Dorothy M.	Domestic Science	Reno
Darling, Corliss A.	Agriculture	Reno
Day, Grace A.	Arts and Science	Reno
Delahide, John J.	Mines	Jackson, Cal.
Dillon, Alice	Arts and Science	Reno
Elder, Macon	Agriculture	Auburn, Cal.
Evans, Rowena	Arts and Science	Reno
Finnell, Latham	Mines	Red Bluff, Cal.
Folsom, Ethel	Arts and Science	Reno
Grayson, Harry Watson	Mines	Vallejo, Cal.
Gulling, Ailene	Arts and Science	Reno
Hallock, Mertrude	Arts and Science	Reno
Hart, Earle W.	Mines	Carson City
Haskell, D. Maude	Arts and Science	Reno
Hawes, Ethel	Arts and Science	Reno
Hawkins, Mrs. Prince	Agriculture	Reno
Heine, Henry W.	Civil Engineering	Washington, D. C.
Henriques, Frederick C.	Arts and Science	Brooklyn, N. Y.
Hibbard, Geraldine Conger	Arts and Science	Reno
Hickey, Edward Ritter	Civil Engineering	Oakland, Cal.
Higham, Jane Elliott	Arts and Science	Reno
Hill, Vinnie J.	Arts and Science	Reno
Houstan, Mrs. M. C.	Arts and Science	Reno
Howe, Edith	Arts and Science	Reno

Hurd, Mrs. Charles	Arts and Science	Reno
Jones, Mabel A.	Arts and Science	Reno
Jones, Beatrice E.	Arts and Science	Reno
Kaye, Mrs. A. E.	Arts and Science	Reno
Kniffen, John L.	Mines	Nova Scotia
Laden, Helene	Arts and Science	Reno
Littlejohn, Ernestine	Arts and Science	Reno
Loder, Echo L.	Arts and Science	Reno
Lusk, Ward Webster	Mechanical Engineering	Reno
MacCormack, Grace	Arts and Science	Reno
McKenzie, Mrs. George	Arts and Science	Reno
Mackay, Eric Reay	Agriculture	Reno
Madden, Charles P.	Mines	Reno
Menardi, John Blair, Jr.	Agriculture	Reno
Miller, Laura P.	Arts and Science	Reno
Miller, Mrs. C. O.	Arts and Science	Reno
Miller, Mrs. Elsa R.	Arts and Science	Reno
Mott, Mrs. Grayson	Arts and Science	Reno
Murphy, Mrs. Lulu	Domestic Science	Reno
Neeld, Harper Crozer	Mines	San Antonio, Texas
North, Mrs. Gussie	Arts and Science	Reno
O'Neill, Mary G.	Arts and Science	Reno
Ordahl, Mrs. George	Arts and Science	Reno
Parsons, Mrs. Isabelle	Arts and Science	Reno
Paull, Mrs. Elizabeth	Domestic Science	Reno
Percival, Harold Fred	Civil Engineering	French Gulch, Cal.
Perdue, Mrs. M. M.	Domestic Science	Reno
Perkins, Cary	Civil Engineering	Oakland, Cal.
Pierce, Mrs. M.	Arts and Science	Reno
Piggott, Earl	Mechanical Engineering	Astoria, Ore.
Pruett, Dale Beade	Mechanical Engineering	Reno
Raymond, Phillip E.	Mechanical Engineering	Reno
Richardson, Raymond Robert	Arts and Science	Truckee, Cal.
Rielly, Elizabeth	Arts and Science	Goldfield
Robison, Mrs. M. A.	Arts and Science	Reno
Rogers, Paul Van Velsor	Civil Engineering	Washington, D. C.
Roush, Pearl M.	Arts and Science	Reno
Schweiss, Laura K.	Arts and Science	Reno
Seitz, Charles Edward	Agriculture	Reno
Shannon, Leo T.	Mechanical Engineering	Reno
Shearer, Ralph W.	Mechanical Engineering	Reno
Smith, Clara Isabelle	Arts and Science	Reno
Tyler, Gilbert Martin	Mines	Palo Alto, Cal.
Vinton, Mary B.	Arts and Science	Reno
Wheeler, Mildred D.	Arts and Science	Reno
Wildman, Mrs. Jane	Arts and Science	Reno
Williams, Mrs. E. L.	Domestic Science	Reno
Wilson, Mrs. N. E.	Arts and Science	Reno

SUMMARY

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Sophomores	7	
Freshmen	14	
Specials	6	
		37

School of Civil Engineering—

Seniors	1	
Juniors	2	
Sophomores	1	
Freshmen	3	
Specials	6	
		13

College of Agriculture and Domestic Science

School of Agriculture—

Seniors	1	
Juniors	2	
Sophomores	4	
Freshmen	8	
Specials	8	
		23

School of Domestic Science—

Specials		8

College of Education

Seniors	1	
Juniors	0	
Sophomores	12	
Freshmen	10	
Specials	0	
		23

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LABEL

UNIVERSITY OF NEVADA BULLETIN

VOL. VII JULY, 1913 No. 3

UNIVERSITY OF NEVADA REGISTER



1912-1913

TWENTY-FIFTH ANNUAL NUMBER

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REGISTER

OF THE

UNIVERSITY OF NEVADA

For the Year 1912-1913

WITH ANNOUNCEMENTS FOR THE YEAR 1913-1914

TWENTY-FIFTH ANNUAL NUMBER

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BY THE
UNIVERSITY OF NEVADA
RENO, NEVADA


TYPOGRAPHICAL
UNION
LABEL
WASHOE

OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, July, 1913.

To His Excellency, TASKER L. ODDIE, *Governor of the State of Nevada.*

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1912–1913, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: HOSEA E. REID,
Chairman.

GEORGE H. TAYLOR, *Secretary.*

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PREFATORY NOTE

THE REGISTER. The register number of the University Bulletin is issued annually. It presents a complete outline of the organizations constituting the University, its affiliated organizations, and its scope; it also lists the members of the faculty and student body for the current year and the courses of study to be offered for the coming year. As these announcements are prepared some time in advance, slight changes are sometimes necessary at the beginning of the college year.

REGISTRATION. New students are requested, where possible, to send their high-school or other credentials to the Registrar at least two weeks before the beginning of the first semester in September. Registration takes place during the first three days of the semester, when all students are expected to present themselves. Registration cards are issued from the Registrar's office. Fees and deposits are payable at the Comptroller's office upon presentation of card from the Registrar.

BOARD AND ROOM. The University maintains a residence hall for men and one for women, and also a dining hall. Applications for rooms should be made early in the summer.

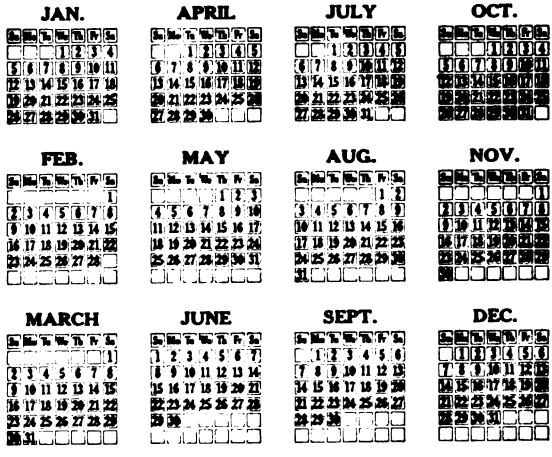
UNIVERSITY OFFICES. Students will find the offices of the President, Registrar, and Comptroller on the first floor of Morrill Hall.

CALENDAR OF GRADUATES. A bulletin giving the records of graduates and a list of former students with present addresses is in process of preparation. When issued, a copy will be sent to each member of the Alumni Association and to such former students as request it.

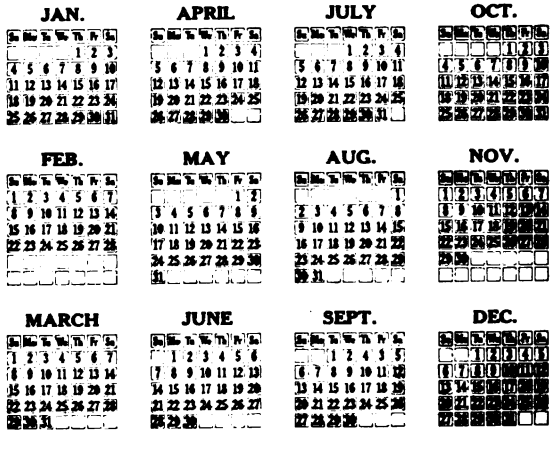
COMMUNICATIONS. Requests for the annual register and other publications, and inquiries relating to the admission of students, should be addressed to the REGISTRAR. Communications relating to matters directly in charge of the administration, and all correspondence bearing upon the general interest of the University should be addressed to the PRESIDENT, University of Nevada, Reno, Nevada.

SUMMER SCHOOL. For information concerning the Summer School for Teachers, address the COLLEGE OF EDUCATION, University of Nevada, Reno, Nevada.

1913 - CALENDAR - 1913



1914 - CALENDAR - 1914



UNIVERSITY CALENDAR

1913 FIRST SEMESTER, 1913–1914

September 2–3	Tuesday–Wednesday	Examinations for admission
September 2–3	Tuesday–Wednesday	Reexaminations to remove conditions
September 3–4	Wednesday–Thursday	Matriculation and registration
September 5	Friday	Recitations and lectures begin
October 31	Friday	Admission Day
November 27	Thursday	Thanksgiving Day
December 20	Saturday	First semester ends
December 21	Sunday	Holiday vacation begins
1914		
January 4	Sunday	Holiday vacation ends

SECOND SEMESTER, 1913–1914

January 5–6	Monday–Tuesday	Examinations for admission
January 5–6	Monday–Tuesday	Reexaminations to remove conditions
January 6–7	Tuesday–Wednesday	Matriculation and registration
January 8	Thursday	Recitations and lectures begin
February 12	Thursday	Lincoln's Birthday
February 22	Sunday	Washington's Birthday
April 10–12	Friday–Sunday	Easter recess
		Inspection of Cadet Battalion
May 23	Saturday	Senior examinations end
May 30	Saturday	Memorial Day
May 31	Sunday, 10:30 a. m.	Baccalaureate sermon
May 31	Sunday, 2 p. m.	Band concert on Mackay Quadrangle
June 1	Monday	Thesis Day
June 1	Monday, 10 a. m.	Annual meeting of the Honorary Board of Visitors
June 1	Monday, 2 p.m.	Exhibition of Domestic Science Department

[*Calendar continued on next page.*]

June 1	Monday, 8 p. m.	Senior, farce
June 2	Tuesday	Class Day
June 2	Tuesday	Annual meeting of Board of Regents
June 2	Tuesday, 4 p. m.	Examinations end
June 2	Tuesday, 8 p. m.	Folk songs and dances by Department of Physical Education for Women
		Art Exhibition in Room 206, Morrill Hall
June 3	Wednesday, 10 a. m.	COMMENCEMENT
June 3	Wednesday, 8 p. m.	Senior ball

OFFICERS OF GOVERNMENT

THE REGENTS OF THE UNIVERSITY

The Hon. Hosea E. Reid (1911–1915) Chairman.....Reno
The Hon. Charles B. Henderson (1911–1915) Elko
The Hon. Arthur A. Codd (1913–1917).....Reno
The Hon. James W. O'Brien (1913–1915).....Sparks
The Hon. Walter E. Pratt (1913–1917) Goldfield
Mr. George H. Taylor, Secretary.....Reno
Mr. Charles H. Gorman, Comptroller.....Reno

OFFICERS OF ADMINISTRATION

President of the University.....Joseph Edward Stubbs
Vice- and Acting President Robert Lewers

HONORARY BOARD OF VISITORS

Hon. Geo. F. Talbot, Chairman	Carson City, Ormsby County
Hon. Robert M. Price, Secretary	Reno, Washoe County
Hon. H. A. Comins	Ely, White Pine County
Hon. George Watt	Austin, Lander County
Hon. Frank H. Norcross	Carson City, Ormsby County
Hon. Edwin E. Caine	Elko, Elko County
Hon. Wm. J. Douglass	Tonopah, Nye County
Hon. Maurice Sullivan	Goldfield, Esmeralda County
Hon. A. R. Merritt	Fallon, Churchill County
Hon. Edward Reinhart	Winnemucca, Humboldt County
Hon. Chas. Fulstone	Genoa, Douglas County
Hon. C. H. Duborg	Beowawe, Eureka County
Hon. John Shier	Caliente, Lincoln County
Hon. F. P. Langan	Virginia City, Storey County
Hon. W. E. Lawson	Mason, Lyon County
Hon. Wallace J. Wilcox	Las Vegas, Clark County
Hon. John H. Miller	Hawthorne, Mineral County

OFFICERS OF THE FACULTY

President.....Joseph Edward Stubbs
Vice- and Acting President.....Robert Lewers
Registrar.....Louise M. Sissa
Librarian.....Joseph Dieffenbach Layman
Master of Lincoln Hall.....Scott E. Jameson
Mistress of Manzanita Hall.....Mrs. A. E. Kaye
Superintendent of Grounds.....Joseph Lynch
Secretary to the President.....Carolyn M. Beckwith

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

The President and the Vice-President of the University are ex officio members of all Standing Committees.

Student Affairs for Men.....LEWERS, JAMESON, PALMER, POWERS, APPLEWHITE
Student Affairs for Women.....Miss BARDENWERPER, Mrs. KAYE, Miss DAY, Miss LEWERS
Athletics.....SCRUGHAM, HASEMAN, APPLEWHITE
Public Exercises.....DOTEN, LAYMAN, HASEMAN
Honors and Scholarships.....Miss WIER, HARTMAN, R. ADAMS
Public Health.....MACK, JOHNSTONE, Miss BARDENWERPER
Delinquent Scholarship.....M. ADAMS, Miss BARDENWERPER, CHURCH
Military Affairs.....APPLEWHITE, JONES, THOMPSON
Admission and Advanced Standing.....FRANDSEN, ORDAHL, Miss DE LAGUNA
Graduation and Thesis.....HILL, YOUNG, WATSON
Schedules and Examinations.....BOARDMAN, THOMPSON, KENNEDY
University Publications.....CHURCH, HILL, WATSON
Library.....LAYMAN, CHURCH, Miss WIER
Senior College and Graduate Courses.....R. ADAMS, HARTMAN, Miss WIER
Appointment Committee.....HARTMAN, ORDAHL, Miss DE LAGUNA
Advisory Committee.....WATSON, M. ADAMS, FRANDSEN
Registration.....M. ADAMS, Miss BARDENWERPER, CHURCH

UNIVERSITY FACULTY

OFFICERS OF INSTRUCTION AND ADMINISTRATION AND OTHER OFFICERS

With the exception of the President, the names of all professors and officers in the first group whose appointments antedate April, 1907, are arranged in order of appointment to rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, assistants, and officers are arranged in their respective groups according to order of appointment to present rank.

JOSEPH EDWARD STUBBS[1]

President of the University

Instructor in Greek and Latin, Ohio Wesleyan University, 1872–75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880–86; President Baldwin University, Ohio, 1886–94; Honorary D.D., German Wallace College, 1890; President Ohio College Association, 1891–92; President of the University of Nevada, 1894–; Professor of Psychology and Ethics, 1894–95; Professor of Political Science and Ethics, 1895–1904; Professor of Elementary and International Law, 1904–11; President Association of American Agricultural Colleges and Experiment Stations, 1899–1900; LL.D., Ohio Wesleyan University, 1905–.

ROBERT LEWERS

Vice-President, Professor of Elementary and International Law and Municipal Accounting

Teacher, Public Schools, Mill Station, Nevada, 1882–83; Sutro, Nevada, 1884–85; Dayton, Nevada, 1886–89; Registrar, University of Nevada, 1890–1906; Professor of Political Economy and Principal of the Commercial School, 1890–1911; Professor of Elementary and International Law and Teacher of Commercial Subjects, 1911–13; Acting President, 1912–; Professor of Elementary Law and Municipal Accounting, 1913–. Elks' Hall, 38 West First Street. Phone 431.

RICHARD BROWN[2]

Superintendent of Buildings and Master of Lincoln Hall

Cutter in United States Mint, Carson City, 1889–1891; Superintendent of Department of Mechanical Engineering, University of Nevada, 1891–1899; Superintendent of Buildings and Grounds, University of

[1]On leave of absence, 1912–1913. [2]On leave of absence, 1912–13.

Nevada, 1891–1912; Superintendent of University Dining Hall, University of Nevada, 1895–; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–12; Superintendent of Buildings, 1912–.

JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher, District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896– (absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

358 Washington Street. Phone 1563.

LAURA DE LAGUNA

Professor of Romanic Languages and Literatures

Instructor in English, Mills Seminary, California, 1888–89; Instructor in French and English, Oakland Seminary, California, 1890–91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894–95; Student Romance Languages, Rome, Paris, 1895–96; Instructor in Modern Languages, University of Nevada, 1896–99; Assistant Professor of Modern Languages, 1899–1901; Associate Professor of Modern Languages, 1901–1906; Professor of Modern Languages, 1907–1911; Professor of Romanic Languages and Literatures, 1911–. 1029 North Virginia Street.

JEANNE ELIZABETH WIER

Professor of History and Political Science

Teacher, Public Schools, Rockwell, Iowa, 1889–1892; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893–95; Student, Leland Stanford Junior University, 1896; Acting Assistant Professor of History, University of Nevada, 1899–1901; B.A. (History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901–06; Secretary, Nevada Historical Society, 1904–; Professor of History, 1907–.

844 North Center Street. Phone 95.

PETER FRANDSEN

Professor of Biology

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895–96; A.B., Harvard University, 1898; A.M., 1899;

Tutor and Assistant in Zoology, Harvard University, 1898–99; Graduate Student, Harvard University, 1899–1900; Assistant in Zoology, Harvard University and Radcliffe College, 1899–1900; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900–02; Associate Professor Zoology and Bacteriology, 1902–03; Professor of Zoology and Bacteriology, 1903-06; Professor of Biology, 1906–; Absent on leave, for travel and study in Europe, 1909–10.

210 Maple Street. Phone 1163.

PATRICK BEVERIDGE KENNEDY

Professor of Botany, Horticulture and Forestry

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900–; Associate Professor of Botany and Horticulture, University of Nevada, 1900–02; Professor of Botany, Horticulture and Forestry, 1902–; Absent on leave for travel and study in England, 1910–11.

311 Elm Street. Phone 952.

GEORGE J. YOUNG

Professor of Mining and Metallurgy

B.S., College of Mining, University of California, 1899; Analytical Assistant, Mining Department, University of California, 1899–1900; Student of Economic Deposits, and Mining and Metallurgical Practice in the Field during summer months, 1900, Bodie District, California; 1901, in Utah, Colorado, California; 1902, in Utah and Montana; 1903–04, in Nevada and California; Assistant Professor of Metallurgy, University of Nevada, 1900–02; in charge of Nevada State Mining Laboratory, 1900–; Member of American Institute of Mining Engineers, 1900–; Professor of Mining and Metallurgy, University of Nevada, 1902–; Absent on leave for travel and study in Europe, 1909–10; In charge of Cooperative Laboratory for the examination of potash-bearing materials, 1912–.

435 East Sixth Street. Phone 1616.

SAMUEL BRADFORD DOTEN

Professor of Entomology

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898–1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900–05; Instructor in Mathematics and Entomology, 1900–02; Assistant Professor of Mathe-

matics and Entomology, 1902–03; Assistant Professor of Entomology, Meteorology and Mathematics, 1903–05; Principal of the University High School and Teacher of Mathematics, Consulting Entomologist, and Meteorologist, Nevada Agricultural Experiment Station, 1905–06; Entomologist, Experiment Station, and Professor of Entomology, 1906–; M.A., University of Nevada, 1912.

323 West Street. Phone 62.

ROMANZO ADAMS

Professor of Economics and Sociology

Teacher, Public School, Bloomingdale, Wisconsin, 1886–87; Marshalltown, Iowa, 1887–88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892–94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology and Principal of the Normal Department, Western College, Iowa, 1898–1900; Graduate Student, University of Chicago, 1900–02; Fellow in Sociology, University of Chicago, 1901–02; Ph.D. (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905–10; Director N. E. A., 1908–10; Professor of Education and Sociology, University of Nevada, 1902–11; Acting Professor of Economics, 1911–12; Professor of Economics and Sociology, 1912–.

735 West Street. Phone 1498.

GORDON HAINES TRUE[1]

Professor of Agriculture and Animal Husbandry

B.S., University of Wisconsin, 1894; Instructor in Dairy Husbandry, Michigan Agricultural College, 1894–99; Professor of Animal Husbandry, University of Arizona, 1899–1903; Chairman Executive Committee, Arizona Agricultural Association, 1901–03; Professor of Agriculture and Animal Husbandry, University of Nevada, 1903–13; Director, Nevada Agricultural Experiment Station, April, 1912–July, 1913.

JAMES GRAVES SCRUGHAM

Professor of Mechanical and Electrical Engineering

B.M.E., Kentucky State College, 1900; with Creaghead Engineering Company, Cincinnati, Ohio, 1900; Graduate Student, University of Michigan, summer, 1901; Director of Manual Training, High School, Highland Park, Chicago, 1901–03; with Metropolitan Elevated Railway, Chicago, 1902; Instructor in Mechanical Engineering, Kentucky State College, Summer School, 1903; Assistant Professor of Mechanical Engineering, University of Nevada, 1903–05; Member of International

[1]Resigned, June, 1913.

Electrical Congress, 1904; with Abner Doble Company, San Francisco, summer, 1905–06; Associate Professor of Mechanical Engineering, University of Nevada, 1905–06; M.E., Kentucky State University, 1906; Instructor in Mechanical Engineering, Summer School, University of Wisconsin, 1907; Engineer of Tests, Oregon Short Line Railroad, summers 1908–11; Assistant Engineer of Tests, Southern Pacific Company, summer, 1912; Consulting Engineer, Elko-Lamoille Power Company, 1912; Professor of Mechanical Engineering, University of Nevada, 1906–1912; Professor of Mechanical and Electrical Engineering, 1912–.

Nevada and Eighth Streets. Phone 1740.

WILLIAM SIDNEY TANGIER SMITH [1]

Professor of Geology and Mineralogy

B.L., University of California, 1890; Graduate Student, Johns Hopkins University, 1890–91; Ph.D., University of California, 1896; Professor of Mathematics and Natural Science, Occidental College, Los Angeles, 1894–95; Fellow in Mineralogy, University of California, 1895–97; Professor of Mathematics, State Normal School, Chico, California, 1897–98; Assistant in Chemistry, University of California, 1898; Assistant in Mineralogy, University of California, 1899–1900; Assistant Geologist, U. S. Geological Survey, 1900–07; Associate Professor of Geology and Mineralogy, University of Nevada, 1906–07; Professor of Geology and Mineralogy, University of Nevada, 1907–12; Absent on leave, 1912–13; Fellow, Geological Society of America; Fellow, American Association for the Advancement of Science.

MAXWELL ADAMS

Professor of Chemistry

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890–91; A.B. (Chemistry), Stanford University, 1895, A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in Chemistry, Leland Stanford Junior University, 1895–97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of Chemistry and Physics, State Normal School, Chico, California, 1897–1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900–01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900–06; Consulting Chemist Diamond Match Company, 1901–06; Fellow, American Association for the Advancement of Science; Professor of Chemistry, University of Nevada, 1906–.

29 West Ninth Street. Phone 1502.

[1]Resigned, 1913.

WINFRED BERDELL MACK

Professor of Bacteriology and Veterinary Science

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904–1905; Assistant in Pathology and Bacteriology, Cornell University, 1905–06; Veterinarian and Bacteriologist, Nevada Agricultural Experiment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1906–; Director of State Hygienic Laboratory, 1909–.

829 Lake Street. Phone 498.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–03; Graduate Student and Reader, University of Chicago, June, 1903–June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904–September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905–September, 1905; Fellow in English, University of Chicago, June, 1906–September, 1907; Ph.D., University of Chicago, 1911; Professor of the English Language and Literature, University of Nevada, 1907–.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

255 University Terrace. Phone 886.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888–August, 1889; with Field Engineer Corps, World's Columbian Exposition, June, 1891–January, 1892; Instrumentman, Memphis Artesian Water Company, January–September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; C.E., University of Wisconsin, 1911; with Engineering Department Sanitary District of Chicago, on Topographic Surveys and in charge of Cement Testing Laboratory, June, 1894–December, 1896; miscellaneous engineering work, Chicago, January–August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897–August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901–March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and

Checker (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January–August, 1905; Superintendent, Fitzsimmons and Connell Company (bridge substructure), August–December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer in charge branch canal projects, Sanitary District of Chicago, January–August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.
737 Evans Avenue. Phone 1803.

LEON WILSON HARTMAN
Professor of Physics

B.S., Cornell University, 1898; A.M., 1899; Graduate Scholar in Physics, 1899; Assistant in Physics, 1900–01; Professor of Physics, Kansas Agricultural College, 1901–02; Frazer Fellow in Physics, University of Pennsylvania, 1902–03; Ph.D., 1903; Tyndale Fellow in Physics of the University of Pennsylvania, Goettingen, 1903–04; Instructor in Physics, Cornell University, 1904–05; Assistant Professor of Physics, University of Utah, 1905–06; Associate Professor of Physics, 1906–09; Professor of Physics, 1909; Fellow A.A.A.S., Am. Phys. Soc., Utah Academy of Science; Professor of Physics, University of Nevada, 1909–. 215 Maple Street. Phone 851.

CARL ALFRED JACOBSON
Professor of Agricultural Chemistry

B.S., Carleton College, Northfield, Minnesota, 1903; Graduate Student, Johns Hopkins University, Baltimore, Maryland, 1903–04; Europe, 1901–02; Instructor in Chemistry, York City High School, York, Pennsylvania, 1904–07; M.S. (*in absentia*), Carleton College, 1907; Ph.D., Johns Hopkins University, 1908 (Chemistry, Physical Chemistry and Physics); Fellow and Research Chemist, Rockefeller Institute for Medical Research, New York, 1908–09; Professor of Agricultural Chemistry, University of Nevada, and Chief Chemist, Nevada Agricultural Experiment Station, 1909–; Absent on leave, 1911–13, to conduct investigations in Organic and Biological Chemistry at the Universities of Cracow, Austria; Geneva, Switzerland; Uppsala, Sweden; and Halle, Germany. 421 Walnut Street. Phone 835.

CHARLES HASEMAN
Professor of Mathematics and Mechanics

A.B., Mathematics, Indiana University, 1903; Instructor in Mathematics and Physics, High School, Elwood, Indiana, 1903–05; A.M., Indiana University, 1906; Assistant in Mathematics, Indiana University, 1905–06; Ph.D., Mathematics, University of Goettingen, 1907; Instructor

in Mathematics, Indiana University, 1907–08; Assistant Professor of Mathematics, Indiana University, 1908–09; Associate Professor of Mathematics, University of Nevada, 1909–10; Professor of Mathematics and Mechanics, University of Nevada, 1910–.

JOHN CALVIN WATSON

Professor of the Greek Language and Literature

A.B., Eureka College, 1892; A.B., Harvard University, 1894; Teacher of Latin and Greek, High School, Menominee, Michigan, 1894–96; Principal, 1895–96; Teacher of Latin, Lake View High School, Chicago, 1896–99; Graduate Student in Classical Philology, Harvard University, 1899–1902; A.M., 1900, and Ph.D., 1902, Harvard University; Assistant in Classics, Radcliffe College, 1900–01; Instructor in Latin, Cornell University, 1902–07; Reader in Latin at Entrance Examinations for Harvard University and Radcliffe College, and for the College Entrance Examination Board, 1903–06; Assistant Professor of Greek, University of Nevada, 1910–11; Professor of the Greek Language and Literature, 1911–.

749 Lake Street. Phone 621.

GEORGE ORDAHL

Professor of Education and Psychology

Principal, Public Schools, Merrillville, Indiana, 1900–01; Corvallis, Montana, 1901–03; A.B., University of Oregon, 1905; A.M., 1906; Fellow, Clark University, Worcester, Massachusetts, 1906–08; Ph.D., Clark University, 1908; Professor of Psychology and Education, Geneva College, Beaver Falls, Pennsylvania, 1908; Assistant Professor of Education and Psychology, University of Nevada, 1909–11; Professor of Education and Psychology, 1911–; Director of Summer School for Teachers, 1912–.

115 West Tenth Street. Phone 1391.

STERLING PRICE FERGUSSON

Professor of Meteorology and Climatology

Assistant to H. H. Clayton at Blue Hill Observatory, 1887–1890; Assistant in Charge of Instruments, Blue Hill Observatory, 1890–1909; Meteorologist, 1909–10; Associate Meteorologist, Nevada Experiment Station, 1910–; Professor of Meteorology and Climatology, University of Nevada, 1911–.

41 West Ninth Street. Phone 1396.

HUGH LAFAYETTE APPLEWHITE

Professor of Military Science and Tactics

Graduate, United States Military Academy, 1897; appointed Second Lieutenant of Infantry, 1897; transferred to 6th Artillery and assigned

to Siege Battery E, 1898; Mustering-out Officer 1st D. C. Volunteer Infantry, Washington, D. C., 1898; promoted to First Lieutenant, 1899; promoted to Captain, 1901, and was assigned to and organized the 103d Company Coast Artillery at Fort Howard, Maryland; graduated from School of Submarine Defense, Fort Totten, New York, 1905; on duty, Jackson Barracks, New Orleans, 1906; on general recruiting duty, 1906–1908; retired, 1908; detailed Professor of Military Science and Tactics, Peacock Military College, San Antonio, Texas, 1908–10; on duty reorganizing militia of Utah, 1910–12; Professor of Military Science and Tactics, University of Nevada, June 1, 1912–.

155 University Terrace. Phone 1659.

ERNEST ALBERT HOWES[1]

Professor of Agronomy

B.S.A., 1911, Ontario Agricultural College, Guelph, Canada; Seed Analyst, Department of Agriculture, Ottawa, Canada, 1911–12; Professor of Field Husbandry and Station Agronomist, University of Nevada, 1912–13.

OSCAR P. JOHNSTONE

Associate Professor of Physiology and Hygiene

Ph.B., College of Grinnell, Iowa, 1897; M.S., University of Iowa, 1902; M.D., Rush Medical College, 1905; Fellow in Chemistry, University of Iowa, 1900–01; Assistant in Physiology, Cornell University, 1901–03; Assistant in Physiology, Cornell University, Summer School, 1903; Assistant in Pathology, Rush Medical College, 1903–04; Fellow in Pathology, Rush Medical College, 1904–06; Professor of Pathology, University of Colorado, 1905–07; Substitute in Pathology, Rush Medical College, for Professor Ricketts, summer of 1907; for Professor LeCount, spring of 1908; Pathologist, Mercy Hospital, Pittsburg, Pennsylvania, 1908–09; Associate Professor of Physiology and Hygiene, University of Nevada, 1909–; Assistant State Hygienic Laboratory, 1909–.

821 North Center Street. Phone 1539.

REUBEN CYRIL THOMPSON

Associate Professor of the Latin and Greek Languages and Literatures

B.A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., Harvard, 1902; Instructor in Latin and History, High School, Boise City, Idaho, 1902–05; Professor of Latin, State Normal School, Albion, Idaho, 1905–08; Instructor in History and Civics, Idaho State Summer Normals, 1907–08; Instructor in Latin and Greek, University of Nevada, 1908–09; Assistant Professor of Latin and Greek and Associate Principal of the University High School, 1909–10; Associate Professor of Latin and Greek and Principal of the University High

[1]Resigned, June, 1913.

School, 1910–12; Associate Professor of Latin and Greek, University of Nevada, 1912–. 1101 Riverside Avenue. Phone 463.

KATE BARDENWERPER

Assistant Professor of Home Economics

Graduate, State Normal School, San José, California, 1880; Teacher, Public Schools, Carson City, Nevada, 1880–86; First Assistant, High School, Carson City, 1886–94; Critic Teacher Training School, University of Nevada, 1894–99; Student Leland Stanford Junior University, 1898–99; Student University of California, 1900–01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S. (Home Economics), 1901; Instructor in Home Economics, University of Nevada, 1904–05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Home Economics, University of Nevada, 1905–. 1029 North Virginia Street.

SANFORD CROSBY DINSMORE

Assistant Professor of Agricultural Chemistry

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903–05; Chemist, Nevada Agricultural Experiment Station, 1905–09; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906–; In Charge Food and Drugs Control, 1910–13; Deputy Sealer, Department of Weights and Measures, 1912–13; Commissioner, Food and Drugs Control, 1913–; Sealer, Department of Weights and Measures, 1913–.

223 University Terrace. Phone 1744.

KATHERINE LEWERS

Assistant Professor of Freehand Drawing

Student, St. George's Art School, Glasgow, 1893–94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894–97; Student with Howard Helmick, Washington, D. C., 1897–99; received prize scholarship New York School of Design, 1900; studied at New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905–; Photographer, Nevada Experiment Station, 1905–; Assistant Professor of Freehand Drawing, 1907–.

J CLAUDE JONES

Assistant Professor of Geology and Mineralogy; Curator of the Museum

A.B., University of Illinois, 1902; Instructor in Physics and Manual Training, Champaign High School, 1902–03; Instructor in Manual Training, Whiting High School, 1903–04; Assistant in Geology, University of Illinois, 1904–05; Instructor in Geology, University of Illinois,

1905–06; Graduate Student, University of Chicago, 1906–09; Research Assistant in Geology, University of Chicago, 1907–09; Instructor in Physiography, University of Kansas, summer term, 1907; Instructor in Physiography, University of Chicago, summer term, 1908; Member of the State Geological Survey of Illinois, 1906–09; Instructor in Geology and Mineralogy, University of Nevada, 1909–10; Curator of the Museum, University of Nevada, 1909–; Assistant Professor of Geology and Mineralogy, University of Nevada, 1910–.

736 West Street. Phone 823.

AMOS ARTHUR HELLER[1]

Assistant Professor of Botany, Horticulture and Forestry

A.B., Franklin and Marshall College, 1892; A.M., 1897; Sc.D., 1911; Field Agent, U. S. Department of Agriculture, 1892; Botanical explorations in Virginia, North Carolina, Texas, Hawaiian Islands, Idaho, 1893–96; Instructor in Botany, University of Minnesota, 1896–98; Chief of Vanderbilt Expedition of New York Botanical Garden to Porto Rico, 1898–99; in publishing business, Lancaster, Pennsylvania, 1900–01; Botanical explorations in California, 1902–07; Author of Catalogue of North American Plants, 3 editions; Editor of Muehlenbergia, 1900–; Author of 150 papers on botany and forestry. Member of the Torrey Botanical Club of New York City, and of the Linnæen Society of Lancaster, Pennsylvania; Assistant Botanist, Horticulturist and Forester, Nevada Agricultural Experiment Station, 1908–10; Assistant Professor of Botany, Horticulture and Forestry, University of Nevada, 1910–.

539 West Fifth Street.

CHARLES HENRY GORMAN

Comptroller

Registrar, University of Nevada, 1911–12; Comptroller, 1912–.

621 West Sixth Street. Phone 289.

LOUISE MARY SISSA

Registrar

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884–1892; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893–1901; House Mother, Rowland Hall, Salt Lake City, 1901–05; House Mother, Miss Head's School, Berkeley, California, 1905–06; Assistant Registrar, University of Nevada, 1906–12; Registrar, 1912–.

1033 Ralston Street. Phone 1417.

[1]On leave, 1913–1914.

GUSTAVUS SWIFT PAINE[1]

Instructor in English

Ph.B., University of Chicago, 1908; Ph.M., University of Chicago, June, 1909; Instructor in English, University of Nevada, 1909–.

GEORGE DELAFIELD POWERS

Instructor in Mechanical Engineering

B.S., University of Nevada, 1907; Testing Engineer, General Electric Company, 1907–08; Electrical Foreman, Southern Pacific Company, 1908–10; Instructor in Mechanical Engineering, University of Nevada, 1910–.

310 Thoma Street.

WALTER S. PALMER

Instructor in Mining and Metallurgy

B.S., Mining Engineering, University of Nevada, 1905; with the Greene Consolidated Copper Company, Cananea, Mexico, 1905; Mining and Metallurgical practice in the field, summer months, 1906—Virginia City, Nevada, and Wilkes-Barre, Pa.; E.M., School of Mines, Columbia University, New York, 1907; Mine Surveyor, United States Smelting, Refining and Mining Company, Mammoth, California, 1907–08; Assistant Chemist, Balaklala Consolidated Copper Company, Coram, California, 1908–09; Mining Engineer, United States General Land Office, 1909–10; Instructor in Mining and Metallurgy, University of Nevada, 1910–; Chemist and Assayer, State Mining Laboratory, 1910–.

201 State Street.

ALBERT WILLIAM PRESTON

Instructor in Mechanical Engineering

Machinist, C. R. I. & P. R. R., 1897–1901; Toolmaker, McNeil Machinery Company, 1901; Assistant Machine Foreman, Chicago Great Western Ry., 1902–05; Machinist and Assistant Foreman, Southern Pacific Ry., 1905–1910; Student in Engineering, University of Nevada Extension School, 1905–09; Instructor in Mechanical Engineering, University of Nevada, 1910–.

117 Tenth Street.

FRANK LEROY PETERSON

Instructor in Irrigation and Farm Mechanics

B.S., Mechanical Engineering, University of Nevada, 1907; Field Assistant in Irrigation Investigations in cooperative work between U. S. Department of Agriculture and State of Nevada, 1908–11; Agent in charge Irrigation Investigations, U. S. Department of Agriculture, 1911–;

[1]Absent on leave, 1913–14.

Irrigation Engineer U. S. Department of Agriculture, 1912; Assistant in Irrigation, Nevada Agricultural Experiment Station, 1911–12; Irrigation Engineer Nevada Agricultural Experiment Station, 1912–; Instructor in Irrigation, University of Nevada, 1911–12; Member American Society of Agricultural Engineers; Instructor in Irrigation and Farm Mechanics, 1912–.

Experiment Station Farm, East Ninth Street. Phone 492.

EDWARD R. VON JANINSKI[1]

Instructor in German

B.A., New York University, 1909; studied at the University of Paris, 1909–1910; Instructor in English, Ecole Pierre, Paris; studied at the Universities of Grenoble and Munich, 1910–11; Instructor in German, and head of the department, University of Nevada, 1911–13.

GRACE ALICE DAY

Supervisor of Training, College of Education

Advanced graduate, State Normal School, Winona, Minnesota, 1899; Teacher, Public Schools, Red Wing, Minnesota, 1899; Minneapolis, Minnesota, 1899–1909; summer student, University of Minnesota, 1900; Instructor, Minnesota State Teachers' Training Schools, 1903, 1904, 1905, 1907, 1909, 1910, 1911; Lecturer, Teachers' Institutes, 1910; Student, Teachers' College, Columbia University, 1909–11; B.S., Columbia University, 1911; B.Di., in Education (Supervision) Teachers' College, Columbia University, 1911; Supervisor of Training, College of Education, University of Nevada, 1911–. (Office in Orvis Ring School Building. Manzanita Hall. Phone 172.

LESLIE THEODORE SHARP

Instructor in Agronomy

B.S., University of California, 1911; Assistant in Soils Research Laboratory, California Agricultural Experiment Station, 1911–12; Instructor in Agronomy (Soils), University of Nevada, and in charge Soils Research Laboratory, Nevada Agricultural Experiment Station, 1912–.

VERNER E. SCOTT

Instructor in Dairying

B.S. in Agriculture, University of Wisconsin, 1911; Instructor in Dairy, Poultry, and Animal Husbandry, Dunn County School of Agriculture, Menomonie, Wisconsin, 1911; Instructor in Dairying, University of Nevada, 1912–. 606 West Fifth Street

[1]Resigned, June, 1913.

ELSIE SAMETH
Instructor in Physical Education for Women

A.B., Cornell University, 1909; B.S., Columbia University, 1911; Instructor in Folk Dancing, Cornell University, 1908–09; Physical Director for Women, Cornell University Summer School, 1911, 1912, 1913; Physical Director, Public Schools, Goldfield, Nevada, 1912; Instructor in Physical Education for Women, University of Nevada, January, 1913–. Manzanita Hall. Phone 172.

CHARLES LEROY BROWN[1]
Assistant in Biology

Teacher in Public Schools, 1894–1905; Student at Pacific College, 1894–95; Student at Christian College, 1897–98; Assistant in Biology, University of Nevada, 1906–08; Student, University of California, 1908–09; Student, University of Nevada, 1909–13; Assistant in Biology, University of Nevada, 1910–13; B.A., University of Nevada, 1912; M.A., 1913.

MILES BRYCE KENNEDY
Assistant in Chemistry

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1907–08; Assistant in Chemistry, 1908–.
237 University Terrace. Phone 1719.

EDWIN EUGENE WILLIAMS
Assistant in Chemistry

B.S. (Education), University of Nevada, 1912; Assistant in Chemistry, University of Nevada, 1912–.
Hotel Golden Annex. Phone 914.

THOMAS P. WALKER
Student Assistant in Mathematics

Student Assistant in Mathematics, 1912–.

CAROLYN M. BECKWITH
Secretary to the President

Assistant Office Secretary, 1902–03; Secretary to the President, 1904–.
638 Washington Street. Phone 1387.

MRS. A. E. KAYE
Mistress of Manzanita Hall

Mistress of Manzanita Hall, 1904–.
University Campus. Phone 172.

[1]Resigned, June, 1913.

JOSEPH B. LYNCH
Superintendent of Grounds

Superintendent of Grounds, 1911–.
755 Evans Avenue

SCOTT E. JAMESON
Master of Lincoln Hall

B.A., University of Nevada, 1900; Master of Lincoln Hall, University of Nevada, 1912–. University Campus. Phone 173.

AFFILIATED ORGANIZATIONS

THE STATE MINING LABORATORY

STAFF

JOSEPH EDWARD STUBBS[1].....President
ROBERT LEWERS.....Vice- and Acting President
GEORGE J. YOUNG.....In Charge
J CLAUDE JONES.....Geologist and Mineralogist
WALTER S. PALMER.....Chemist and Assayer
CAROLYN M. BECKWITH.....Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have them analyzed and assayed without cost. (Secs. 4660–4663, incl., Revised Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that these must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be given to the sender, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which they came, and all other matters that may be beneficial touching the same."

In compliance with the above section, reports have been rendered and a record book kept. In order to make reports as accurate as possible, it is suggested that the citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning value.

[1]On leave, 1912–13.

Cooperative Laboratory for the Examination of Potash-Bearing Materials

As an adjunct to the investigation of the fertilizer resources, and especially to the search for potash in the United States now being conducted by Government agencies, there has been established in the Mackay School of Mines, Reno, Nevada, a laboratory for the examination of natural material suspected of containing potash. The laboratory has been organized under a cooperative agreement between the Mackay School of Mines and the Bureau of Soils of the United States Department of Agriculture. The laboratory is in charge of Professor George J. Young, of the Mackay School of Mines, with Mr. J. A. Cullen of the Bureau of Soils, as chemist. Facilities have been provided for the examination and assay of potash-bearing materials, and of saline waters and minerals. It will be possible, also, to examine a limited number of samples for contained nitrates.

Samples of suspected potash or nitrate-bearing materials will be examined free of charge for prospectors and others, so far as limitations of time and equipment of the laboratory will permit, but all samples must be accompanied by the following information:

1. The name and postoffice address of the owner, locator, or discoverer of the deposit.
2. The exact location from which the sample was obtained.
3. A description of the material and its surroundings, and of the manner of taking the sample.

This information, or any part of it, will be kept confidential if so requested. However, it should be noted that the laboratory does not agree to make complete analyses or to make quantitative assays, except as rendered desirable by the result of qualitative tests. In all cases, however, it is the intention to make such assays and examinations as will determine the potash or nitrate value alone of the material represented by the sample.

All samples should be addressed to: Cooperative Laboratory, Mackay School of Mines, Reno, Nevada. Dry samples should be at least one-half pound in weight, should be securely wrapped and tied, and marked with the name and address of the sender. Samples of brines or water should be placed in clean bottles of at least one quart capacity, stoppered with clean corks securely tied in, and should be well

packed against breakage. Transportation charges must always be prepaid.

The State Hygienic Laboratory

STAFF

Joseph Edward Stubbs[1] President
Robert Lewers Vice- and Acting President
Winfred Berdell Mack Director
Oscar P. Johnstone Pathologist and Bacteriologist

The State Hygienic Laboratory was organized during 1909, under the provisions of an Act of the Legislature approved March 25, 1909. The object of the laboratory is to provide facilities for the diagnosis of the infectious diseases and for research into the nature, cause, and methods for the control of such diseases. The services of the laboratory staff are available to the physicians, health officers and health boards of the State for the diagnosis of certain communicable diseases. Advice and assistance will, on request, be rendered the sanitary officials in the control of outbreaks of infection and in securing sanitary supplies of milk and water.

The results of the work of the laboratory are made public from time to time through bulletins, circulars, and annual reports, and will be sent free on request to residents of the State who desire them.

Laboratory for Pure Food and Drugs

STAFF

Joseph Edward Stubbs[1] President
Robert Lewers Vice- and Acting President
Sanford Crosby Dinsmore Commissioner
Miles Bryce Kennedy Assistant

An Act providing for the inspection and analysis of foods, drugs and liquors, manufactured or offered for sale within this State, was passed by the 1909 session of the Legislature, and became effective January 1, 1910. The State law is modeled after the National Food and Drugs Act of June 30, 1906, and provides that all rules, regulations, definitions, and decisions proclaimed by the Secretary of Agriculture for the enforcement of the National law shall be adopted by this department in the enforcement of the State law.

With such provisions Nevada receives valuable aid through

[1]On leave, 1912–13.

the Federal regulations, and avoids conflict with neighboring States having laws also modeled closely after the National Act. Uniformity in State and National laws, and cooperation among officials, is much to be desired, and more can be accomplished under such conditions than by working under laws that are dissimilar or antagonistic to established regulations that have been in vogue in States maintaining food laws for a number of years.

The laws of this State being similar to the National law, obviates the necessity of manufacturers providing special labels to meet any special requirements that otherwise might exist in this State. Often labels are submitted to this department for approval or correction so that they will comply with the Nevada food law.

Laboratory for Weights and Measures

STAFF

Joseph Edward Stubbs[1].....President
Robert Lewers.....Vice- and Acting President
Sanford Crosby Dinsmore.....Sealer
Silas Earl Ross.....Deputy Sealer

An Act concerning and fixing standard weights and measures and to regulate the sale of commodities or articles of merchandise according to such standards, was passed by the 1911 session of the Legislature and became effective January 1, 1912.

The standard weights and measures as have been adopted by the Government of the United States have been adopted as the legal standard of weights and measures throughout the State of Nevada. With this adoption Nevada receives aid through the Federal regulations and creates uniformity of State and National standards.

[1]On leave, 1912–13.

THE AGRICULTURAL EXPERIMENT STATION

THE BOARD OF CONTROL

The HON. HOSEA E. REID (1911–1915), Chairman.....Reno
The HON. CHARLES B. HENDERSON (1911–1915).....Elko
The HON. ARTHUR A. CODD (1913–1917).....Reno
The HON. JAMES W. O'BRIEN (1913–1915).....Sparks
The HON. WALTER E. PRATT (1913–1917).....Goldfield
Mr. GEORGE H. TAYLOR, Secretary.....Reno
Mr. CHARLES H. GORMAN, Comptroller.....Reno

STAFF

JOSEPH EDWARD STUBBS, LL.D.[1].....President
ROBERT LEWERS.....Vice- and Acting President
*.....Director
*.....Animal Husbandman
PATRICK BEVERIDGE KENNEDY, Ph.D.....In Charge of Botany, Horticulture and Forestry
A. ARTHUR HELLER, Sc.D.[2].....Assistant in Botany, Horticulture and Forestry
FRANK L. PETERSON, B.S.....Irrigation Engineer
SAMUEL BRADFORD DOTEN, M.A.....Entomologist
WINFRED BERDELL MACK, D.V.M.....Bacteriologist and Veterinarian
JAMES EDWARD CHURCH, JR., Ph.D.....Meteorologist
STERLING PRICE FERGUSSON.....Associate Meteorologist
CARL ALFRED JACOBSON, Ph.D.....Chemist
*.....Agronomist
PETER FRANDSEN, A.M.....Consulting Biologist
MAXWELL ADAMS, Ph.D.....Consulting Chemist
LESLIE THEODORE SHARP, B.S.....In Charge Soil Investigations
VERNER E. SCOTT, B.S.....Consulting Dairy Husbandman
THEODORE W. CLARK.....Superintendent of Farm
Mrs. T. W. COWGILL, M.A.....Librarian
Mrs. LOUISE BLANEY, B.A.....Station Secretary

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated $15,000 for the support of an Agricultural Experiment Station in each State and Territory in the Union.

[1]On leave, 1912–13 [2]On leave, 1913–14.

*Appointment to be made.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; the economic relation of entomology to agriculture; the relation of climate to agriculture and horticulture; the conservation of snow; the forecasting of frost; the determination of relatively frost-free areas for fruit growing; in fact the solving of all problems pertaining to agriculture which are or may be of importance to the State.

The results of the work of the Station are made public through bulletins and reports, which are sent free to all residents of the State who desire them.

ASSOCIATION OF UNIVERSITY ALUMNI

The Alumni Association was organized June, 1894. Its object is to promote union and good fellowship among the Alumni and to advance and protect the interests of the University of Nevada. The dues of the Association are $1 a year for ten years or a life membership for $10. The annual meeting is held during Commencement week at the University.

OFFICERS, 1913–14

President FRANK L. PETERSON, '07
Vice-President HELEN FULTON, '10
Secretary-Treasurer Mrs. LOUISE BLANEY, '95

EXECUTIVE COMMITTEE

THE OFFICERS
HELEN B. HIGGINS, '13
ALBERT W. CAHLAN, '96

ASSOCIATION OF NORMAL ALUMNI

President Mrs. MARY SNOW THURTELL, '90
Vice-President IRENE V. BROWN, '09
Secretary-Treasurer Mrs. HATTIE RHODES PIERSON, '90

UNIVERSITY ADDRESSES

COMMENCEMENT, 1912

May 12—Baccalaureate Sermon, Rev. Herbert Atchison Jump, First Congregational Church, Oakland, California.

May 15—Commencement Address, "Current Politics and Civic Duty," Hon. Hugh H. Brown of Tonopah, Nevada.

May 15—Scholarship Address, Hon. A. A. Codd, University Regent.

May 15—Presentation to the University of the portrait of President Stubbs, Hon. Frank H. Norcross, Justice of the Supreme Court.

May 15—Acceptance of portrait for the University, Hon. Charles B. Henderson, University Regent.

GENERAL ASSEMBLY 1912–1913

August 16, 1912—Address, Dr. W. R. Jenvey, Archdeacon of the Diocese of New Jersey; "The Seventy-fifth Anniversary of the University of Michigan," Dr. J. E. Church; "Farewells," Dr. J. E. Stubbs.

November 11, 1912—Address, "A Few Results of a True Education," Rev. Charles M. Sheldon of Topeka, Kansas.

November 21, 1912—Musical program by the Glee Clubs.

March 3, 1913—Address, "Irish Fairy and Folk Lore," Seamus MacManus.

COMMENCEMENT, 1913

May 11—Baccalaureate Sermon, Rev. Robert J. Burdette of Los Angeles, California.

May 14—Commencement Address, Elmer I. Goshen, Minister First Congregational Church, Salt Lake City, Utah.

May 14—Scholarship Address, Hon. J. W. O'Brien, University Regent.

ORGANIZATION AND ADMINISTRATION

FOUNDATION

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko, by a law approved March 7, 1873, but was moved to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University began with the academic year 1886–87.

The State Normal was authorized by an Act of the Legislature approved February 7, 1887; and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS

The University maintains the following Colleges and Schools, which aim to meet the best ideals of modern university life and training:

I. The College of Arts and Science.

II. The College of Agriculture:
 1. The School of Agriculture.
 2. The School of Home Economics.

III. The College of Engineering:
 1. The Mackay School of Mines.
 2. The School of Mechanical and Electrical Engineering.
 3. The School of Civil Engineering.

IV. The College of Education.

V. Summer Session for Teachers.

GOVERNMENT

Under the Constitution and laws of the State of Nevada, the government of the University is vested in a Board of Regents, consisting of five members elected by the people. The immediate control is vested by law in the President under the direction of the Board of Regents. The administration is directed by the administrative officers and the Academic Council with the approval of the Board of Regents.

THE PRESIDENT

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be Chairman of the Academic Council and ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, subject to the approval of the Academic Council and Board of Regents, appoint the standing committees and shall name the chairman of such committees.

THE VICE-PRESIDENT

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE REGISTRAR

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the student and the administrative and academic committees.

He shall prepare, subject to the approval of the President and the Academic Council, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be secretary of the Council and shall keep a record of its proceedings.

THE COMPTROLLER

The Comptroller is the accountant of the University; it is his duty to receive all drafts, checks, and moneys, whether sent to the President or to the Secretary of the Board of Regents, or to any employee of the University, or to any other official, or to any bank; and these shall be turned over to him for endorsement and deposit. He shall have charge of the bookkeeping and accounting of the University. He shall also be the custodian of all deeds, abstracts, and similar legal papers of the University.

THE ACADEMIC COUNCIL

The Academic Council consists of the President and the Vice-President of the University, all professors and associate professors, the Registrar, the Librarian, such assitant professors as have been upon the rolls of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Regents, determine.

The Academic Council is vested with all of the powers and duties usually vested in the faculties of similar institutions.

All general University regulations, statutes, and rules as to the matters within the province of the Faculty, shall be initiated in and passed by the Academic Council, and shall be in force, subject to the power of disapproval in the Board of Regents and in the President of the University. However, no regulation, statute, or rule involving a change in the educational policy of the University in respect to the requirements of admission, the course of study, or the conditions of graduation, shall take effect as above until it has been submitted to the Board of Regents for their approval.

The Academic Council shall formulate the duties and control the policy of the several committees.

The Council shall recommend to the President of the University, and he to the Board of Regents, the candidates for graduation.

A majority of its members shall constitute a quorum of the Academic Council.

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

The standing committees shall be as follows:

1. Student Affairs for Men.
2. Student Affairs for Women.
3. Athletics.
4. Public Exercises.
5. Honors and Scholarships.
6. Public Health.
7. Delinquent Scholarship.
8. Military Affairs.
9. Admission and Advanced Standing.
10. Graduation and Theses.
11. Schedules and Examinations.
12. University Publications.
13. Library.
14. Senior College and Graduate Courses.
15. Appointment Committee.
16. Advisory Committee.
17. Registration Committee.

Standing committees shall be appointed annually by the President, subject to the approval of the Board of Regents, and they shall enter upon their duties the first of July of each year.

SPECIAL COMMITTEES

Special committees may be appointed by the President of the University, to which the Academic Council may assign the consideration of any matter within its jurisdiction.

THE COLLEGE FACULTIES

The College Faculties shall have the directing of the educational policies in their respective colleges, and shall recommend to the Academic Council changes in the requirements for admission, the course of study, and the conditions of graduation.

ADVANTAGES AND EQUIPMENT

ADVANTAGES OF SITUATION

Reno, the seat of the University, is a thriving community of twelve thousands inhabitants. It is situated in the beautiful Truckee Valley, at the junction of three railroads, namely, the Southern Pacific Railroad, a trunk line between the East and the West; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railway. The imposing mountains which encircle the valley, the pure air and sunshine, give the town an enviable reputation for health and beauty. The numerous churches are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instructions and in their plans of work. The Young Men's Christian Association of Reno has a beautiful and modern building, equipped in a most up-to-date manner for athletics and for social activities. The proximity of Reno to the famous Comstock Lode, the mines of Tonopah and Goldfield, and the copper mines of eastern Nevada, enables the School of Mines to offer a large amount of practical training in mining operations.

ENDOWMENT AND SUPPORT

The endowments and appropriations on which the University has been founded and maintained are the following:

1. The donation of 21.15 acres of land by the Central Pacific Railroad, and the erection of a building in 1873–74 by the citizens of Elko at a cost of more than eighteen thousand dollars.

2. When the University was removed to Reno by an Act of the Legislature in 1885, the Board of County Commissioners of Washoe County paid to Elko County $20,000, and to the Board of Regents $5,000 to be expended in purchasing a site at Reno.

3. The fund derived from the Congressional Land Grant of July 2, 1862, the interest of which is included in the biennial appropriation.

4. Various appropriations by the State Legislature for buildings and other specified purposes.

5. The biennial appropriation by the State Legislature for the support of the University.

6. The Agricultural Experiment Station Funds, for demonstration and research in Agriculture, of $30,000 a year; the Hatch Fund, $15,000; the Adams Fund, $15,000.

7. The Morrill College Fund of $50,000 a year for Agricultural and Mechanic Arts, apportioned to the College of Agriculture and the College of Engineering.

8. The Mackay Endowment Fund of $150,000, a perpetual endowment of the Mackay School of Mines, the gift of Mrs. Louise Mackay and Clarence H. Mackay, the widow and son of John W. Mackay. This gift is in the form of securities netting $6,000 annually for the support of teaching in the Mackay School of Mines.

BUILDINGS AND GROUNDS

The University Campus has an area of fifty-three acres and is beautifully located on an eminence overlooking the city. The academic buildings center upon a turfed quadrangle; broad walks and drives traverse the grounds. The natural advantages of the site lend well to landscape embellishment, and during the past year much has been done toward beautifying the grounds.

The following brief descriptions will give some idea of the principal buildings and the purposes for which they are used:

MORRILL HALL—Morrill Hall is a three-story brick building with a large basement. The first floor is occupied by the administrative offices of the President and of the Board of Regents, and the Department of Mathematics. The Departments of History and Ancient Languages occupy the second floor, and the Commercial Department and Department of Meteorology and Climatology are on the third floor. Pending the completion of the new library building, the University Library occupies the basement of Morrill Hall.

STEWART HALL—Stewart Hall is a three-story and basement brick building. In the basement are the rooms of the Department of Home Economics and the rest rooms for women. The Departments of Education, Modern Languages, and English, and the Association Room of the Y. W. C. A. occupy the first floor. The second floor is occupied by the Department of Economics and Sociology, the

Seed Laboratory and class room of the Agronomist, other class rooms, and the office of the "Sagebrush," the college newspaper. The third floor is occupied by the Department of Botany, Horticulture and Forestry.

HATCH STATION—Hatch Station is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the office of the Director of the Station, the Departments of Animal Husbandry and Irrigation, Entomology and the Station Library. The second floor of Hatch Station is given to the Departments of Biology, Veterinary Science, Bacteriology, and the State Hygienic Laboratory. The third floor is occupied as a general Biological Laboratory.

MACKAY MINING BUILDING—The Mackay Mining Building, the gift of Clarence H. Mackay, houses the Departments of Mining and Metallurgy, and of Geology and Mineralogy. It is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and a library occupy the space between the wings. The first floor contains the geological lecture room, office, and petrographic laboratory; the geological and mining library; the geological and mining museum; the weighing room, assaying laboratory, and metallurgical and mining laboratory. The second floor contains the mineralogical and research laboratories, drafting room, mining lecture room, and offices.

MECHANICAL BUILDING—The Mechanical Building is on the east side of the Quadrangle; the ground floor contains the machine shop, the blacksmith shop and the boiler room. The machine shop is furnished with screw-cutting lathes, a polishing lathe, a shaper, a universal milling machine, a universal cutter grinder, bench vises, wet and dry emery wheels, and a toolroom equipped with small machine tools and experimental apparatus for the use of shop students. The blacksmith shop has forges and the necessary tools. The second floor accommodates the wood-working shop. This shop is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools.

ELECTRICAL BUILDING—The Electrical Building is situated

just north of the Mechanical Building. This is a handsome structure of brick, with stone facings and trimmings. The spacious laboratories are completely equipped with the most modern machinery and appliances for the study of electrical, mechanical and civil engineering. On the first floor are located the lecture rooms and the electrical, gas and steam engineering laboratories. The second floor contains the library, drafting rooms and fuel-testing laboratory.

PHYSICS BUILDING—The Physics Building, which is in the main devoted to the Department of Physics, is a substantial two-story brick building. On the first floor are the balance room, the darkrooms, the storage battery room, the shop and the laboratories. A photometer bar occupies the larger darkroom. The storage battery room is wired for seventy cells and is provided with a switchboard adapted for either charging or discharging the batteries. The laboratories are fitted up with high-grade apparatus of modern type. The electrical laboratory is supplied with the best forms of American and German instruments, such as galvanometers, standard resistances, standard condensers, standard Weston and Carhart-Clark cells, resistance boxes, Wheatstone bridges, voltmeters, ammeters, etc. The apparatus used for heat and sound is the best obtainable. For work in light, lenses and mirrors to be used in measuring focal lengths, gratings to be used in measuring the wave-length of light, a ruling engine to be used in making gratings, refractometers, spectrometers and prisms to be used in determining the indices of refraction, are all available for student use. The shop contains a lathe and a full set of tools for all kinds of metal work The second floor contains the lecture room with a seating capacity of eighty persons, the apparatus rooms and the offices. The lecture room is equipped with projection screens, wall galvanometers, a switchboard provided with direct and alternating current terminals, a large static machine, and a lecture room table provided with gas and water mains. The Department of Art and Freehand Drawing occupies one room on the first floor, and the soil research laboratory and dairy laboratory another room.

CHEMISTRY BUILDING—The Chemistry Building is a two-story gray stone building standing on the west side of the quadrangle. On the first floor are found the inorganic, qualitative and quantitative laboratories, a balance room, stockroom, and the professor's private laboratory, which is

equipped for electro-chemical work. The qualitative laboratory accommodates sixty-five students, and the quantitative, which is also used as an organic laboratory, accommodates thirty-six students. Both laboratories are supplied with hoods, gas, water, steam-evaporating pans, compressed air, and direct-current electricity. The chemical laboratory of the Agricultural Experiment Station occupies the south half of the second floor. This laboratory has been wholly remodeled and equipped for organic research. It contains four working desks supplied with gas, water, and steam, commodious hoods, motor-driven centrifuge, vacuum and compressed-air systems, electric ovens, etc. Adjoining this laboratory is an office for the research chemist, and one for the food and drug chemist. The second floor also contains a lecture room accommodating seventy persons; the weights and measures apparatus and an exhibition room for pure food and drug products; two stockrooms, a darkroom for photographic work, an office and a department library. The basement is divided into two compartments, one being used as a furnace and combustion room, the other as an acid room. All the laboratories are heated from the central heating plant.

LINCOLN HALL—Lincoln Hall, the men's dormitory, is a three-story brick building, built after the plan of such halls in use in the larger eastern colleges, and affords a comfortable home for one hundred young men. The building is heated from the central heating plant, and is furnished with shower baths, lavatories, etc. The building will be thoroughly renovated and refurnished during the present summer vacation. Students are expected to furnish their bedding and linen.

MANZANITA HALL—Manzanita Hall, the girl's dormitory, is a large brick building with granite facings. It is modern in style and equipment, is steam-heated throughout, and provides an attractive and comfortable home for about seventy-five girls. The rooms are single and in suites of bedroom and study. The bedroom contains two single beds, two attractive dressers of oak or birdseye maple, a small table, and chairs. Each bedroom has two large closets. The study has a bookcase, a big leather-covered study table, and comfortable chairs. There are a few suites of three rooms, with two big bedrooms for four girls, and some with one large and one small room for three girls. The woodwork in all the rooms is stained dark-brown, and the rooms are a lighter, but subdued, shade of the same color, toning in softly with the

wood, making an admirable background for pictures and college penants. There is a large recreation room, where the girls read and talk, play games, dance and sing, and a well-appointed drawing room, where guests are received. The floors throughout the building are of maple.

GYMNASIUM—The Gymnasium is a brick building one hundred and twenty feet long and sixty feet wide. The assembly hall is one hundred feet by sixty feet, and is used for general University purposes. The building is specially devoted to the use of the young women's classes in Physical Training and is being equipped with shower baths, dressing rooms, etc., for the use of that department. The Military Department will be moved to the old quarters of the library in Morrill Hall when the new library building is finished.

PRESIDENT'S HOUSE—The President's house is situated on the southeast corner of the Campus. It is colonial in style, and is a fine, commodious house, an ornament to the University.

HOSPITAL—The University Hospital is situated between the Gymnasium and Lincoln Hall. This is a one-story building and contains six rooms. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. A matron is in charge of the Hospital. Students may have any physician whom they prefer.

DINING HALL—The Dining Hall is a one-story brick building on the west side of the Campus. It is conveniently equipped for the accommodation of one hundred and fifty students.

GREENHOUSE—A working greenhouse is on the east side of the Campus. It is used by the Departments of Biology, Botany and Horticulture, and also for the study of plant industry and the growing of plants.

HEATING PLANT—A central heating plant supplies most of the buildings on the Campus with heat. It consists of two large boilers, pumps, engines, motors, etc., and is operated in connection with the mechanical engineering laboratories.

NEW BUILDINGS

During the present summer a Library Building and a Dairy Building will be erected. The Library Building will

be situated on the west side of the quadrangle and will be constructed of brick and stone to conform with the architecture of the other buildings.

The Dairy Building will be a two-story brick and stone building, situated east of the Mechanical Building. On the first floor will be laboratories for butter and ice-cream making, a demonstration room for hand separators, a cheese-curing room, and a refrigeration room. The second story will contain the lecture room, testing laboratory, lockers for students, office and laboratory for cheese making. The equipment will be of the latest design with facilities for instruction in all branches of dairy manufacture.

THE MACKAY FIELD

The natural amphitheater on the Campus, which has been leased to the University for a number of years by the late Regent Evans, was purchased for the University by Mr. Clarence H. Mackay and provision made for its improvement. In order to make room for other branches of athletics, such as basket-ball and tennis, the Nevada Legislature of 1909 made provision for the purchase of additional land to the south of the old field, so that now about ten acres of land is being used for athletic purposes. The improvements donated by Mr. Mackay include a Training Quarters Building, situated on the east side of the field. This building has showers, baths, locker and dressing rooms, a committee room and a lounging room. Directly opposite to this on the west bank are the bleachers and colonnade. The natural slope of the bank has been utilized so that the field closely resembles the stadium used at the ancient Olympic games. There are seventeen tiers of concrete, with a colonnade for a covered grandstand in the rear. The seating capacity is about two thousand.

Situated between these structures in a full-sized Rugby football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard dash.

LIBRARIES

GENERAL LIBRARY

The University Library contains twenty-four thousand bound volumes and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works

and reference volumes of various kinds. The books are catalogued according to the Dewey Decimal Classification System.

The reading room is supplied with daily and weekly newspapers and with many of the best periodicals. The list includes about 280 subscriptions to the leading cultural, scientific, and technical magazines.

The Library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. During summer sessions and vacations, special hours are announced.

To the general public is extended the use of the Library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students. Borrowers residing outside of Reno are asked to pay the necessary postage or expressage on the books loaned to them.

AGRICULTURAL EXPERIMENT STATION LIBRARY

The Agricultural Experiment Station Library, containing two thousand one hundred bound volumes and a large number of pamphlets, is in the northern wing of Hatch Station. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, general works on agriculture and the related sciences, and on irrigation, and herd books of livestock associations. Many current agricultural periodicals are on the tables in the reading room. The library is catalogued and classified, and suited for ready reference. It is open daily, and, while intended primarily for the use of the Station Staff, it is also accessible to the public.

MINING LIBRARY

All reference books, text-books, technical journals and works pertaining to geology and mineralogy, mining and metallurgy, are concentrated in one large study room which is conveniently located upon the ground floor of the Mackay Mining Building. This library is open at all times during the sessions.

OTHER DEPARTMENTAL LIBRARIES

Additional departmental libraries are maintained for biology, chemistry, bacteriology, veterinary science, and home economics.

TRAVELING LIBRARIES

The University has fifteen traveling libraries for the use of Nevadans outside of Reno. Numbers 1 and 2 have twenty-five books each, the others have fifty books apiece. So far as practicable these are loaned to schools or communities that will pay transportation charges. The "travelers" may remain three months or longer in a place. Then they return to the University Library, are checked up and made ready to loan again. The University will continue this in a modest way until the work can be done better by others. The University requires a deposit of five dollars on each "Traveler."

CITY AND STATE LIBRARIES

Besides the University libraries, members of the University have the facilities of the Reno Free Library, and of the State Public Library which is located at Carson City.

LABORATORIES

Physical Laboratory—The work of the Physical Laboratory is carried along on four distinct lines, each with its separate rooms and its own special equipment. The General Laboratory contains a Freshman and a Sophomore Laboratory for work in sound, mechanics, heat, light, magnetism, and electricity; and a shop. The equipment of the Freshman and Sophomore Laboratories consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the work. Aside from the main laboratories there is a separate room for experiments in heat; a weighing room, containing four Becker balances mounted on piers; a darkroom; and a department library and reading room, which is also available for student use while writing up the laboratory exercises. The department shop contains a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular and linear dividing engine, and a direct-current dynamo with two armatures, furnishing current at various voltages. All of the laboratories are supplied with water, gas and electricity.

Laboratory for Quantitative Analysis—This laboratory

accommodates thirty-six students. It is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

Laboratory for Qualitative Analysis—This laboratory will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas, and fume closets.

Experiment Station Chemical Laboratory—In this laboratory students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

General Biological Laboratory—The biological laboratory has thirty-five laboratory tables, each of which is provided with a miscroscope, reagent lockers, and six drawers fitted with combination locks. The tables have plate-glass tops, resting on rubber mats, so that they cannot be injured by stains or chemicals. In addition to these there are a few operating tables with zinc tops, designed for operating demonstrations and dissections. The general equipment and supplies are kept in wall cases and cabinets, made of quarter-sawed oak and similar to the tables in design. The department now has thirty-seven first-class combined microscopes, four of which are equipped with high-power lenses and all other accessories for the most delicate and precise microscopical work. Among the larger and more expensive instruments are an electric incubator, a Lillie paraffine oven, an electric centrifuge, and sterilizer. An important adjunct to both the class and laboratory work is a combined microscopic and lantern-projection apparatus, which enables the instructor to project microscopic objects as well as photographic illustrations, magnifying up to 3,000 diameters, upon the screen, where they may be observed by the whole class at one time.

Histological and Embryological Laboratory—This laboratory is equipped with all the necessary apparatus for doing general or research work in Histology and Embryology.

Bacteriological Laboratory—This laboratory is fitted up

with apparatus for research in pathology and bacteriology. It is used chiefly for Experiment Station work, and for the work of the State Hygienic Laboratory, but is available for demonstration purposes for students taking elementary bacteriology, and can accommodate a few students who desire to do more advanced work.

Agricultural Botanical Laboratory—This laboratory is located on the third floor of Stewart Hall and is equipped with a collection of economic seeds, charts, cones, samples of native woods, and other illustrative material. The herbarium of the Experiment Station is located in this laboratory and is described elsewhere.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in entomology. It contains also the Photographic Laboratory of the Experiment Station.

Psychological Laboratory—This laboratory is located on the first floor of Stewart Hall, and is equipped with apparatus for class demonstration, experiments, and original research work in psychology and education.

Geological and Mineralogical Laboratories—The Department of Geology and Mineralogy is provided with reference collections illustrating the minerals, rocks, and fossils, and with class collections for study and determination. The Mineralogical Laboratory is arranged, for the present, for the accommodation of single sections of forty students. There is, in addition, a laboratory fitted up for microscopic work, equipped with petrographical microscopes and the necessary accessories. It has also a set of mineral thin sections cut in definite direction, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. A separate grinding room is provided with apparatus for making thin sections of rocks and minerals. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides furnishes additional illustrative material for lecture work.

Chemical Laboratory of the Mackay School of Mines—The Chemical Laboratory is fully equipped with the usual desks, hoods, hot-plates and air-baths. Each desk is provided with gas, compressed air, and electricity. Steam connections are provided for drying-coils and still. Electric air-baths and

drying pans are provided for overnight work. A small electric-driven, five-jar Abbe mill is in use for fine grinding tests. Four four-gallon slime agitators, driven by small electric motor, are used for slime tests. A direct-connected electric-driven exhaust fan draws the air from the hood in the parting room and from this laboratory. A complete electrolytic outfit for lead, copper, and other determinations has been installed. This laboratory will accommodate sixteen students.

Weighing Room—Connected with both the Chemical Laboratory and the parting room is the weighing room. Substantial piers carry the balances. Both chemical and bead balances for assaying work are placed in this room. The equipment consists of two analytical balances and eight bead balances. Different makes of balances are in use, such as the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger.

Parting Room—The cleaning of beads, parting, and ignitions are provided for in a separate room, convenient to the weighing room and Assaying Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

Assaying Laboratory—The preparation of crucible charges and all furnace work is done in the Assaying Laboratory. This laboratory is equipped with six Thompson pulp scales, three double-muffle soft-coal furnaces, three large oil fusion furnaces, four small oil-fired muffles, two coke muffle furnaces, and one coke fusion furnace. Crude oil and distillate are used for the oil furnaces, compressed air being used to spray the oil. The laboratory will accommodate twenty students.

Metallurgical and Mining Laboratory—The metallurgical equipment includes the following machinery, all of commercial size: a three-stamp battery and feeder, amalgamating plates on steel table, a four-foot Union concentrator, a Wilfley concentrating table, a two-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of one-ton capacity, a 3x8 roasting furnace, an eighteen-inch amalgamating pan, a sample crusher, and a sample grinder. A tube mill of 150 pounds capacity and a small Puchuca agitator are provided for slime tests.

The mining machinery equipment consists of an Ingersoll-Sargent drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any mesh coarser than a 40 screen; coarse and fine contentrations of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls or the tube mill—the roasting furnace enabling the ores to be given a chloridizing or an oxidizing roasting before treatment in the vats—and finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-h. p. and a 5-h. p. induction motor drive all the machinery through separate line shafts.

Steam and Gas Laboratory—The equipment is very complete; it consists of a Corliss engine, three automatic cut-off high speed engines, a Curtis turbine, a De Laval turbine, a three-cylinder Standard gas engine, 2 Fairbanks-Morse gas engines, a crude oil engine, an International Harvester Company engine, an Alden dynamometer, a Sargent gas calorimeter, engine indicators, calorimeters, gages and gage testers, pryometers, gas analysis outfits and numerous other pieces of apparatus essential in making tests and investigations on steam and gas machinery.

Electrical Laboratory—Through the liberality of the State Legislature the equipment of the Electrical Engineering Laboratory is now one of the best in the country. Machines of practically all standard types are available for study and operation. In addition to this apparatus there have been provided the necessary controlling devices and instruments for handling the wide range of voltages and currents used in experimental tests. The equipment is especially designed for study of the electrical engineering problems which occur in commercial work, and consists of direct and alternating current generators, motors and converters, high and low potential transformers, a Tirrell regulator, synchroscopes, power factor meter, rheostats, voltmeters, ammeters and watt-meters, multipliers and numerous other smaller pieces of apparatus.

Civil Engineering Laboratory—A first-class Riehle testing machine, 1909 model, 200,000 pounds capacity, operated by an electric motor, a complete cement-testing outfit, and a good assortment of surveying instruments comprise the laboratory equipment of this department. All of these features, as well as a drafting room, are located in the new Electrical Building. The large testing machine is used for the testing and illustrating of the principles governing the strength and elasticity of materials used in engineering construction.

Home Economics Laboratory—The laboratory of the Home Economics Department is located in the basement of Stewart Hall. The cooking laboratory is equipped for eight students working at one time. Besides the gas range, the laboratory contains a coal range. All utensils commonly used in the household are employed. A dining-room suitably furnished, is used by the students in connection with their work in planning and serving meals. This dining-room also contains the sewing machines and other necessary equipment for sewing.

The department has a good reference library in dietetics, hygiene, household science, house decoration, textiles, and economics. The leading current magazines on subjects of home economics are available to the students doing this work.

The Soil Laboratory—The Soil Laboratory of the Agricultural Experiment Station is located in the basement of the Physics Building. The requirements of research problems, routine soil and fertilizer analyses, and University Extension, and the general teaching of the application of the sciences to soils and soil fertility have proportionately influenced the character of the equipment.

The Seed Laboratory—The Seed Laboratory, under the direction of the Department of Agronomy, is a new departure. Here farmers and dealers may have seeds tested as to vitality and purity; a report showing percentage value of seed is mailed free to the senders of the samples. The laboratory contains a large germinator warmed by electricity, a set of seed-grading tables, and a large grain display cabinet.

Dairy Laboratory—The Dairy Laboratory at present is situated in a part of the basement of the Physics Building. The equipment includes material and machinery for testing

milk and its products qualitatively and quantitatively. During the present summer a Dairy Building is being erected. This will contain separate laboratories for the manufacture of butter, cheese, ice cream, and other milk products, as well as a laboratory for testing milk and its products.

SCIENTIFIC COLLECTIONS

GEOLOGICAL AND MINING MUSEUM

The northwest wing of the Mackay Building is devoted to a museum in which the collections of the departments connected with the School of Mines are exhibited. The museum is furnished with beautiful display cases of quartered oak, in which are shown:

1. A type collection of minerals arranged as sulphides, oxides, silicates, etc., the labels giving both the common and mineralogical names, the chemical composition, the locality from which the mineral was obtained, the name of the donor, and such information as is of interest to the general public. This is a large and growing collection containing specimens of over five hundred different mineral species, many of them quite rare, and has been gathered from all over the world.

2. A type collection of rocks containing examples of the more common variety of igneous, sedimentary and metamorphic rocks, labeled as to name and locality. These include not only rocks from North America but from Europe as well.

3. An exhibit of the mineral resources of Nevada. The object of this collection is to illustrate the mineral resources of Nevada, and show the geology of several of its mining camps. The greater part of this collection was obtained from the collection exhibited at the session of the Mining Congress at Goldfield in 1909. It is arranged by counties, the labels giving the name of the specimen, its value, the mining district, and name of the donor. The collection includes specimens of gold, silver, lead, copper, zinc, iron, manganese, mercury, antimony, arsenic, tungsten, nickel, cobalt ores, sulphur, barite, gypsum, borax, salt, diatomaceous earth, coal, kaolin, graphite, marble, building stones, turquois, variscite, opal, mica, and other minerals and rocks of economic importance. This collection is being built up as rapidly as possible through gifts from the mining fraternity of Nevada and by systematic collections during the summer vacations. It will eventually form an epitome of the mineral resources of the State, and is already a striking illustration of the varied and extensive mineral wealth of Nevada.

4. The nucleus of a collection illustrating the different types of mining machinery and appliances. This includes a

small five-stamp mill owned by James Fair when a boy and used by him to stamp out pin money from ore given him by his father; two of the first air drills ever used in mining, a Waugh stoper, an Ingersoll-Sargent drill on a tripod; samples of the different wire cables used in mining; models and drawings of the different methods of timbering; methods of loading and firing drill holes, and different types of lamps, fuses, surveying instruments, etc., used in mining.

5. Maps, models, and pictures. These include geological maps of many of the mining districts of Nevada, and a large map showing all the underground workings of the Comstock Lode on a scale of one hundred feet to the inch. About thirty panoramic photographs of the principal mining camps in Nevada are framed and displayed along the wall. In the center of the museum is the large plate glass model of the workings of the Mohawk mine, Goldfield, and a wooden model of the Holmes and Northern Belle mines of Candelaria.

6. Collections. Among the several collections received during the past two years are the loan collection of the United States Geological Survey of the rocks and minerals of Goldfield; the collection of rocks and minerals formerly in the State Capitol at Carson City; the Cole collection, gathered through thirty years by Dr. A. M. Cole of Virginia City; the Malcolm McDonald collection, presented to the University after the death of Mr. McDonald, and several other smaller collections received through various sources.

7. Besides the above, the museum possesses a considerable number of fossils, both of animals and plants, a few Indian relics, and other miscellaneous material of interest.

The museum is open to the public during the school year, and as far as possible every facility will be placed at the disposal of any one who wishes to inspect or study the various collections.

The continued growth of the museum depends largely upon the generosity of those engaged in the development of the mineral resources of Nevada, and contributions of specimens of ores, minerals, and other interesting and instructive material are earnestly desired.

HERBARIA

The Nevada Agricultural Experiment Station herbarium now contains 12,000 mounted sheets, nearly all of western species, and at least half of them from Nevada. Certain of

the forage plants, as the grasses, clovers and lupines, are especially well represented. Although as yet small, this collection is of considerable importance, as it contains a number of types and typical plants obtained from type localities.

The private herbarium of Dr. A. A. Heller, consisting of about 10,000 specimens, is also deposited with the University. The greater part of this collection is made up of California plants, and in it are many types and typical material from type localities. It is especially strong in the genus Lupinus, over 100 species being represented.

Connected with these herbaria are a large number of negatives depicting various phases of plant life, and a seed collection of 780 specimens.

OTHER COLLECTIONS

Other scientific collections form parts of the working equipment of the Departments of Biology, Entomology, etc.

NEEDS OF THE UNIVERSITY

1. Among other University needs is a biological building and museum for the use of the Department of Biology, the museum wing of this building to be used for scientific collections in natural history so that they can be made available to students and to the public.

2. A University Farm for practical work in Agriculture and Animal Husbandry is one of the University's greatest needs. This farm should be equipped for practical work in crop production, management of live stock and scientific principles of animal breeding, poultry husbandry, general horticulture, and farm management.

3. Scholarships. The friends of education, and particularly the friends of the University, are urged to consider the foundation of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a university course, but whose financial resources are inadequate to obtain it for them. The University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands made upon it. No means of perpetuating a healthful and elevating influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the growing centuries.

4. An endowment of professorships in the University. The sum of $50,000 will provide an adequate endowment for a chair in the University, the interest of this endowment fund going to pay the salary of the professor of the special department.

5. A Division of Extension through which agency the University may be of service to the entire commonwealth, solving many problems in the industrial, economic, and social development of the State, by carrying agricultural knowledge and rendering assistance in other forms to all the people of the State who have rural interests.

LECTURES AND FACULTY ASSOCIATIONS

PUBLIC LECTURES

GENERAL ASSEMBLY

A general assembly of students of the University and members of the Faculty is under the special direction of the President of the University. Lectures are given by members of the Faculty and by men and women of special eminence in particular fields of study, travel, and business enterprise. Attendance is required of all students.

UNIVERSITY EXTENSION LECTURES

Lectures on various subjects by members of the Faculty of the University and Staff of the Agricultural Experiment Station will be given at different points in the State as arrangements can be made between the local communities and the University.

THE UNIVERSITY SCIENTIFIC ASSOCIATION

The University Scientific Association is an organization of those members of the Faculty who are interested in scientific research. The purpose of the organization is to broaden the outlook and to come in touch with scientific progress outside of one's own sphere of activity. Biweekly meetings are held in the lecture room of the Mackay Building. Reports are presented and discussed at each meeting. The subjects of the reports are either the result of individual research, or articles of general interest that have recently appeared in the scientific journals. The meetings are open to visitors.

Advanced students find the meetings of considerable value.

HONORARY SOCIETY

The Phi Kappa Phi is a national honor society composed of graduate and undergraduate members of all departments of American universities and colleges. Its prime object is to emphasize scholarship in the thought of college students, to hold fast to the original purpose for which institutions of learning were founded, and to stimulate mental achievement by the prize of membership. This society elects to membership a certain number from the graduating class, on the basis of high scholarship.

SCHOLARSHIPS, GIFTS AND PRIZES

The following scholarships and prizes are offered for the purpose of assisting deserving students and rewarding excellence in scholarship:

1. The F. O. Norton Scholarship of fifty dollars to the most deserving student in the Mackay School of Mines.

2. A scholarship of one hundred dollars from a friend of the University. This scholarship is awarded at present to Robert Farrer of the College of Arts and Science, at the request of the donor.

3. The H. H. Howe Scholarship of two hundred dollars, payable annually, given by Mr. C. B. Zabriskie of New York, in loving memory of Principal H. H. Howe. This scholarship is awarded by Mrs. H. H. Howe and the President of the University.

4. A scholarship of one hundred dollars annually, given by Ralph S. Stubbs of New York. This scholarship is given to the most deserving student in the University and is to be used for his or her support while in college.

5. A scholarship of two hundred dollars, given each year for five years, the gift of George Wingfield of Reno. This scholarship will be given—one-half the first semester and one-half the second semester—to the most deserving student.

6. The Philo C. Bennett prizes, two of forty dollars each, for the best essay or essays on the principles of free government.

7. In addition to the above is a gold medal awarded annually to that member of the graduating class who has attained the highest average grade in scholarship throughout his or her college course.

THE RHODES SCHOLARSHIPS

Special attention is called to the Rhodes Scholarships in Oxford University, England, to which one appointment from the State of Nevada will be made for each of the years 1913, 1914, 1916, 1917, and so on, omitting every third year. The Scholarships are each of the value of approximately $1,500 a year, and are tenable for three years.

Scholars will be selected from candidates who shall have

passed a qualifying examination in Latin, Greek, and Mathematics. If necessary, Greek may be temporarily postponed, but only those candidates who have passed in at least Latin and Mathematics will be eligible for a Scholarship. Examinations are usually set in the month of October preceding the year for which each appointment is made. Any person who has passed the examination once will be eligible for election at any subsequent time if he satisfies the other conditions of eligibility.

In addition to the requirements of the qualifying examinations, a candidate to be eligible for election from the State of Nevada must—

(1) Be a citizen of the United States and be unmarried.

(2) Be a student in or a graduate of the University of Nevada, or, if a student in some other university or college, a resident of the State of Nevada.

(3) By the first of October of the year for which he is elected have passed his nineteenth and not have passed his twenty-fifth birthday.

(4) By the first of October of the year for which he is elected have completed at least his Sophomore year in the University of Nevada or in some other recognized degree-granting university or college of the United States.

The appointments thus far made to Rhodes Scholarships from the State of Nevada are as follows:

1907—Arthur Leonidas St. Clair, Deeth, Nevada.

1908—William Scott Unsworth, Reno, Nevada.

1910—Stanley Mayhew Wilton, Goldfield Nevada.

1911—Cedric Harding Beebee, Reno, Nevada.

1913—Floyd Sherman Bryant, Sparks, Nevada.

The Rhodes Scholarships offer an unusual opportunity both for a university education in the Liberal Arts, the Sciences, Engineering or the professions of Jurisprudence or Theology, and for travel among the chief centers of life and activity in foreign lands. These advantages, with the gift of financial means ample for their enjoyment, have made these Scholarships the most attractive ever established.

Further information about Oxford and the Rhodes Scholarships may be secured by addressing President J. E. Stubbs, Chairman of the Committee of Selection for the State of Nevada, University of Nevada, or the Secretary of the Committee, Rev. Samuel Unsworth, Reno, Nevada.

STUDENT AFFAIRS

GOVERNMENT OF THE STUDENTS

In the government of the University the largest liberty consistent with good work, good order, and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of University life are advised to remain at home or go elsewhere.

STUDENT ORGANIZATIONS

The Associated Students—The student body is organized into an association called "The Associated Students of the University of Nevada." Through this association the students handle all matters relating to the student body as a whole, and control all athletic interests of the University with the approval of the Faculty Committee on Athletics. The officers of this association are elected by popular vote. By the payment of the athletic fee of $4 the student receives the A. S. U. N. card which entitles him to a vote in the association and to admission to all local games, contests or other events under the association's management.

STUDENT OFFICERS, 1913–1914

President	J. I. CAZIER, '14
Vice-President	CLARK WEBSTER, '14
Secretary	MAUDE PRICE, '15
Treasurer	WM. I. SMYTH, '14
Women's Athletic Manager	LYSLE RUSHBY, '15
Graduate Manager	SILAS E. ROSS, '09
Editor "U. of N. Sagebrush"	ROBERT FARRER, '14
Business Manager "U. of N. Sagebrush"	JOE MCDONALD, '15
Class Representatives for Executive Committee..	ELMORE ABBOTT, '15 COIN CAZIER, '16

The Engineering Society—All engineering students and the engineering faculty are members of the Engineering Society. This society meets once or twice a month during the semester. Engineers and technical men are invited to address the members. The purpose of the society is to broaden the viewpoint and increase the knowledge of the students, as well as to extend their acquaintance among practicing engineers.

The Agricultural Club—The Agricultural Club consists of students of the Agricultural College. The purpose of the club and its motto are the same: "More farmers and better farms."

Christian Associations—The Young Men's and the Young Women's Christian Associations have branch organizations among the students. The young women's branch has a membership of fifty girls in the University. The purpose of the association is the maintenance of high standards in all student relations, mutual helpfulness and pleasure, and the promotion of Christian ideals. Through private benefaction the resident Secretary, Miss Winnifred Wygal, is engaged to direct and serve the University women in any way that they may desire.

Musical Organizations—Volunteer organizations for the promotion of both vocal and instrumental music are heartily encouraged. The organizations at present are the Men's Glee Club, the Women's Glee Club, the University Band, and the University Orchestra.

Other Organizations—The students have established fraternities, sororities, literary societies, musical, and social clubs.

STUDENT PUBLICATIONS

The students publish a weekly paper known as the *U. of N. Sagebrush.* The Junior Class publishes an edition of the Junior Annual known as the *Artemisia.*

ATHLETICS

The University is provided with an excellent gymnasium, and an instructor is in charge of the Department of Physical Education for Women. The physical training for men is included in the Department of Military Science and Tactics.

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. Rugby football, base-

7. The wearing of composite uniform is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

8. Appointments in the Battalion will be determined by military ability, which shall be decided from a careful consideration of the following points:

a. Character.
b. Attendance.
c. Military conduct.
d. Zeal.
e. Soldierly bearing.
f. Aptitude for command.
g. Knowledge of drill and other duties as determined by examination and practical application.
h. Recommendation of superior officers.
i. Length of service in the Battalion.

Generally the commissioned officers are taken from the Senior class, the sergeants from the Junior class, the corporals from the Sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

10. Every cadet who is a candidate for graduation from any of the schools of the University will be required to complete the prescribed course of military instruction, aggregating 8 units. Other cadets will receive an amount of military training proportionate to the length of their attendance at the University.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military service will be forwarded to the War Department and to the Adjutant-General of the State.

13. The punishments to which cadets are liable are:
 a. Suspension of privileges. Private reprimand.
 b. Suspension from the University. Reduction to ranks.
 c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Commandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensable to discipline. Military authority will be exercised at all times, with firmness, kindness and justice; superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to perform the prescribed military duties unless excused in advance by the President or the Commandant. In case of absence without previous excuse, a written explanation will be submitted upon resuming duty. In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to University schools shall be by examination; but a graduate of an accredited school will be received without examination in the subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. Each applicant must supply evidence that his school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination upon the recommendation of the professor under whom the special studies are to be taken; provided, they are at least twenty years of age. Exceptions to this rule may be granted for adequate reasons. Special students cannot become candidates for a degree until they have satisfied the entrance requirements of the school or college in which the degree is sought. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

VISITORS

With the consent of the instructors concerned, students may be admitted to departments as visitors. Visitors shall be enrolled and pay fees, but receive no credit towards a degree.

GRADUATE STUDENTS

Graduate students will be received upon the recommendation of the Committee on Senior and Graduate Courses and the departments in which they desire to pursue their work.

WORK DONE WITHOUT REGISTRATION

Rule adopted by Committees on Registration and Admission and Advanced Standing in joint session on February 1, 1913:

Any work done but not registered for, and for which advanced standing is asked, will be allowed one-half credit. After this date *no* credit will be allowed for work not registered for, except in the case of work done in vacation time.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it is able to complete satisfactorily.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high-school teachers and members of the

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to University schools shall be by examination; but a graduate of an accredited school will be received without examination in the subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. Each applicant must supply evidence that his school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination upon the recommendation of the professor under whom the special studies are to be taken; provided, they are at least twenty years of age. Exceptions to this rule may be granted for adequate reasons. Special students cannot become candidates for a degree until they have satisfied the entrance requirements of the school or college in which the degree is sought. Advanced standing will be granted by the Committee on Entrance and Advanced Standing in consultation with the departments concerned.

VISITORS

With the consent of the instructors concerned, students may be admitted to departments as visitors. Visitors shall be enrolled and pay fees, but receive no credit towards a degree.

GRADUATE STUDENTS

Graduate students will be received upon the recommendation of the Committee on Senior and Graduate Courses and the departments in which they desire to pursue their work.

WORK DONE WITHOUT REGISTRATION

Rule adopted by Committees on Registration and Admission and Advanced Standing in joint session on February 1, 1913:

Any work done but not registered for, and for which advanced standing is asked, will be allowed one-half credit. After this date *no* credit will be allowed for work not registered for, except in the case of work done in vacation time.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it is able to complete satisfactorily.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high-school teachers and members of the

Faculty concerned with accrediting will be held each year on the day preceding the Academic meet.

SCHOOLS ACCREDITED FULLY OR IN PART

Schools	*Principals*
Austin	W. J. Morrison
Carson City	W. J. Hunting
Dayton	Charles Priest
Elko	Frank Swanger
Ely	Bernard Street
Eureka	P. T. McNally
Fallon	R. H. Fetter
Gardnerville	E. Otis Vaughn
Goldfield	Evelyn M. Buck
Lovelock	J. R. McKillop
Reno	W. A. Ferguson
Sparks	M. E. Jepson
Tonopah	C. W. Smith
Virginia City	Jas. V. Comerford
Wadsworth	Mrs. D. L. Scheckler
Winnemucca	J. F. Graham
Yerington	L. W. Bartlett

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plain Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

5. Latin (a)	1
Latin (b)	1
Latin (c)	1
Latin (d)	1
6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1
11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1
18. Agriculture	½ or 1
19. Manual Training	½

For entrance to all colleges the candidates must present English two years; Mathematics a and b; and 11 additional units, to be distributed in the various colleges as follows:

1. In the College of Arts and Sciences, and College of Education:
 a. Division I: Latin, 4 units; elective, 7 units.
 b. Division II: Language, other than English, 2 units; History, 2 units; elective, 7 units.
 c. Division III: Mathematics c; Language other than English, 2 units; Science, 1 unit; elective, 7 units.
2. In the College of Agriculture:
 Language other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units; elective, 8 units[2].
3. In the College of Engineering:
 Language other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units (one unit, however, must represent advanced work); Mathematics c, d, and e, 2 units; elective, 6 units[3].

[1] This requirement will go into effect August 1, 1914.
[2] August 1, 1914, these units will be reduced to 6.
[3] August 1, 1914, these units will be reduced to 4.

Description of Admission Requirements

1. ENGLISH (4 units)

The requirement in English includes both the study of the literature, listed in Groups I–V and the work in grammar, composition, and rhetoric outlined below.

For the minimum requirement the student must present from I, any two; from II, any two; from III, one-half the work outlined; from IV, one-half the work outlined; from V, one-half the work outlined.

LITERATURE

I. Ivanhoe, Silas Marner, and the Vicar of Wakefield, or Henry Esmond; and, for outside reading, any six of the following: The Talisman, The Three Musketeers, Treasure Island, The Last of the Mohicans, The Jungle Book, Quentin Durward, Rob Roy, The House of the Seven Gables, The Tale of Two Cities, Lorna Doone, Emma, Oliver Twist, The Christmas Carol, Pilgrim's Progress, With Fire and Sword, The Cloister and the Hearth, the Newcomes, Les Misérables, The Crisis, The Virginian.

II. The Merchant of Venice, Julius Cæsar, Macbeth.

III. The Vision of Sir Launfal, The Chambered Nautilus, Thanatopsis, The Deserted Village, The Cotter's Saturday Night, Gray's Elegy, The Ancient Mariner, L'Allegro, Il Penseroso, Gareth and Lynette, or the Passing of Arthur, The Princess, and any two of the following: Michael, The Rape of the Lock, Childe Harold (Canto IV), Chaucer's Prologue, Lays of Ancient Rome; selections from Wordsworth, Shelley, Keats, and Arnold.

IV. The Alhambra, The Great Stone Face, The Ambitious Guest, The Gold Bug, The Purloined Letter; and, for outside reading, any two of the following: Hamlin Garland's Main Traveled Roads; Bret Harte's The Luck of Roaring Camp; London's The Call of the Wild; Kipling's The Day's Work; Maupassant's The Coward, The Piece of String, the Necklace; The Book of Ruth.

V. Franklin's Autobiography, or Thoreau's Wild Apples; Addison's Sir Roger de Coverly, or Carlyle's Essay on Burns, or Holmes's Autocrat of the Breakfast Table; Burke's Speech on Conciliation, or Webster's Bunker Hill Oration.

GRAMMAR, COMPOSITION AND RHETORIC

The aim of the course should be to train in correct expres-

sion and effective presentation of simple exercises in description, narration and exposition. A simple text-book in rhetoric should be used. An amount of grammar should be required sufficient to insure correct expression.

2. MATHEMATICS (4 units)

(*a*) Algebra (1 unit). Addition, subtraction, division and multiplication of algebraic expressions; simple equations; simple simultaneous equations of two or three unknowns; factoring; graphs; fractions; ratio and proportion; highest common divisor and least common multiples by the factor method; square root; radicals and fractional exponents simply treated; elementary treatment of quadratic equations.

(*b*) Plane Geometry (1 unit). Rectilinear figures; the triangle; parallel lines; the quadrilateral; polygon; circle; ratio and proportion; similar polygons; area of polygons and the circle.

(*c*) Advanced Algebra (1 unit). Review of elementary algebra; quadratic equations; simultaneous quadratic equations; exponents and radicals; binomial theorem; logarithms; determinants; mathematical induction; progression and other forms of series; theory of equations.

(*d*) Solid Geometry (½ unit). Lines and planes; dihedral and polyhedral angles; polyhedrons; prisms; pyramids; similar and regular polyhedrons; cylinder; cone; sphere; similar solids; mensuration and solid figures.

(*e*) Trigonometry (½ unit). The development of the general formulæ of plane trigonometry with application to the solutions of plane triangles and the measurement of heights and distances. When possible about two weeks should be spent on spherical trigonometry.

3. PHYSICS (1 unit)

The requirement represents at least a daily exercise during one school year, which falls within the last two years of preparation for college. The course should cover the amount of material offered in any of the best modern text-books of Elementary Physics, such as Carhart and Chute's High School Physics, or the First Course in Physics by Millikan and Gale. The instruction should be based upon laboratory work by the student, performed under the teacher's supervision, and class-room demonstration by the teacher. The student's lab-

oratory note-book should be presented to the Department of Physics at time of entrance.

4. HISTORY (3 units)

(*a*) English History (1 unit). A knowledge of the important epochs is required. Larned's History of England indicates approximately the ground to be covered. The main purpose of the requirement is to prepare for the intelligent study of English literature, therefore constant reference should be made to the literary development of the English people.

(*b*) Ancient History (1 unit). This includes The Beginnings of Civilization, or the early Oriental Theoracies; Greece and Macedonia; Rome to the time of Charlemagne. The amount required is indicated by West's Ancient History, or Wolfson's Essentials of Ancient History.

(*c*) American History and Civics (1 unit). A knowledge of the outline of American History, and of the nature of federal, state and local government. The requirement represents three things; the amount of material offered in a text-book in history, such as Channing's Student's History of the United States, a text-book in government such as Hinsdale's American Government, or Bryce's American Commonwealth (abr. ed.), or their equivalent, and systematic reading of assigned references, which should be summarized in a note-book.

5. LATIN (4 units)

a (1 unit). Collar and Daniell's First Latin Book, with the exception of the Colloquia, Collar's New Gradatim, and D'Ooge's Colloquia Latina, pp. 1–31, the exercises in the latter to be read only at sight, represent the nature and amount of preparation required.

b (1 unit). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1–220, with prose composition, or an equivalent.

c (1 unit). Kelsey's selections from Ovid, and Gayley's Classic Myths. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

d Vergil (1 unit). Vergil's Æneid, Books I–VI. Emphasis should be laid upon the development of the student's power to understand Latin prose and poetry in the original,

and upon the thought of the authors read rather than upon the syntax. The writing in Latin of connected English sentences. In this prose work the emphasis should be laid upon the order of words, the simpler features of sentence structure and means of connecting sentences in paragraphs.

6. GREEK (2 units)

a (1 unit). Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences into Attic Greek. White's First Greek Book represents the amount of preparation required.

b (1 unit). Xenophon's Anabasis, Books I–IV, with questions on the forms, syntax, and subject-matter. The translation into Attic Greek, of simple passages of connected narrative based on the Anabasis. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

7. GERMAN (2 units)

a (1 unit). A thorough knowledge of the principles of German grammar. This includes the conjugation of weak and strong verbs, and of the modal and time auxiliaries; the declension of nouns, pronouns, articles, and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

b (1 unit). Reading and translation of the following texts or equivalents: Schiller's Maria Stuart, Modern Prose and Poetry.

The work in German composition should be continued through the second year. Harris's German Composition is recommended.

8. FRENCH (2 units)

a (1 unit). The ability to read at sight easy French prose, to translate correctly simple English sentences into French, familiarity with all the common idioms of the language, a thorough and accurate knowledge of the principles of French

grammar. Rollins's or Super's French Reader indicates the amount of material to be read. The requirements in grammar involve: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminines of adjectives, the plurals of nouns and adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite articles (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work, the student may use Chardenal's Complete French Course; later, Fraser and Squair's Grammar is recommended.

b (1 unit). The translation into English of the following texts or their equivalents: Le Voyage de M. Perrichon, by Labiche and Martin; About's Le Roi des Montagnes; Daudet's Le Petit Chose; de Banville's Gringoire; Meilhac and Halévy's L'Ete de Saint Martin; Coppée's Le Luthier de Crémone; Le Tresor.

9. SPANISH (2 units)

a (1 unit). For the first year in Spanish, Ramsey's, Hill's, and Ford's, Knapp's, Garner's or Wagner's Spanish Grammar may be used. Selections from Matzke's Spanish Reader or Hill's "Spanish Tales for Beginners," or an equivalent are to be used.

b (1 unit). For the second year Galdo's Marianela, Partir a Tiempo, El Pajaro Verde, Electra, and selections from Gil Blas, or equivalent texts are to be read.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry, or Hessler and Smith's Essentials of Chemistry, and an amount of laboratory work equivalent to that outlined in the Manuals which accompany these texts, should be completed. Emphasis should be placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY (½ or 1 unit)

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced.

12. BOTANY (1 unit)

One-half unit will be allowed to any high-school student who has an intelligent knowledge of Andrew's Botany All the Year Round, from pages 1 to 233. (American Book Company, San Francisco.)

For one unit the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pages 289 to 293.

13. ZOOLOGY (1 unit)

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's Introduction to Zoology (The MacMillan Company, New York). Merril's Studies in Zoology (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoology at the time of entrance.

14. PHYSIOLOGY (1 unit)

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work. A microscope and prepared slides of human or animal tissues are necessities. Martin's Human Body (Briefer Course), Hewe's High School Physiology, and Macey and Norris's Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING (½ unit)

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales and cash books, etc., and should include thorough understanding of checks, notes, drafts, billing, and, generally, of all the papers used in modern business.

16. SHOPWORK (1 unit)

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than one unit for such work.

17. DRAWING (½ unit)

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

18. AGRICULTURE (½ or 1 unit)

19. MANUAL TRAINING (½ unit)

GENERAL INFORMATION

EXPENSES OF STUDENTS

TUITION—In accordance with legislative enactment no fees are charged for tuition. This applies to students from outside of the State as well as to students from Nevada. There is, however, a diploma fee of five dollars which must be paid at the beginning of the semester in which the degree is conferred.

RAILWAY RATES—The railways of the State are generously cooperating with the Regents of the University by giving reduced rates to students when traveling to and from the University. The Southern Pacific Company, the Nevada Northern, the Las Vegas and Tonopah, the Nevada Central, and the Eureka and Palisade railroads will sell tickets to students at one-half the usual local rate. To obtain the benefits of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

UNIFORMS—The two uniforms with which the members of the Cadet Batallion are required to provide themselves cost about $26. Deposit for same will be made to the Comptroller. The uniforms may be worn in place of civilian dress. The young women are required to provide themselves with a regulation gymnasium outfit costing about $7. Deposit for key for gymnasium locker for gymnasium suit, 50 cents.

ROOMS—Manzanita Hall is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. The ventilation, heating, lighting and the furnishing of the rooms, are of the very best. Young women coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bedspreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6 feet, to put on mattress; 6 good towels; 2 large aprons for work

in shop and in laboratory; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

Students staying at Manzanita Hall and boarding at the Dining Hall will be furnished board and room at the rate of $18 per month, payable in advance. Students wishing to stay at the dormitory without taking board at the Dining Hall will be charged $5 per month for rooms.

Lincoln Hall is the College home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Scott E. Jameson. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, 2¼ yards by 1½ yards; 4 pillow slips, 20 by 30 inches; 2 white bed spreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

Students staying at Lincoln Hall and boarding at the Dining Hall will be furnished board and room at the rate of $18 per month, payable in advance. Students wishing to stay at the dormitory without taking board at the Dining Hall will be charged $5 per month for rooms.

On being assigned a room in Lincoln Hall a deposit of $1 will be required to cover any possible damage to furniture or fixtures. This deposit will be refunded at the end of the semester on presentation of a proper certificate from the Master of the Hall.

Rooms in private houses can be rented for $10 to $15 per month.

TABLE BOARD—For the accommodation of the students, the University maintains a dining hall in commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and service are organized with a view to securing board and table service of the most acceptable character, and students living in the dormitories are expected to take their meals there.

Students boarding at the Dining Hall and taking rooms in

the dormitories will be furnished board and room at the rate of $18 per month. Students boarding at the Dining Hall but not rooming at the dormitories will be charged at the same rate of $18 per month.

The Dining Hall is open to all members of the University.

The following rules have been approved and adopted for the government of the University Dining Hall:

1. Board is payable in advance.
2. Students desiring to board regularly at the University Dining Hall will be required to register with the head waiter.
3. Registration at the Dining Hall will be made only upon presentation of Comptroller's receipt for board paid or by authority of regular permit from the President of the University.
4. No rebate shall be made on board for less than one week's continuous absence. Due notice must be given of the intended absence or no rebate will be allowed.
5. Regular boarders having guests for extra meals, or persons, not regular boarders, taking meals at the Dining Hall must arrange for same with head waiter.

Table board can be obtained elsewhere at from $25 to $30 per month.

ATHLETIC FEE—A fee of $4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basket-ball, baseball, and track athletics, and debating. In return for the payment of this fee the student receives free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

LABORATORY FEES—The maintenance of its large and valuable laboratories is a constant and heavy expense to the University. For this reason certain departments have to charge fees to cover special expenses incident to their work. These fees are calculated in amount to cover the cost of the materials used and the expense incurred by the individual students; hence the amount of the fee varies in the different laboratories ranging from one to ten dollars per semester.

LABORATORY DEPOSITS—Deposits are required to cover costs of breakage in laboratory courses where breakages are liable to occur. These deposits are payable at the beginning of each semester. At the end of the semester deduction is made for actual breakage and the balance of the deposit is refunded

to the student upon order from the head of the department.

If a student takes two or more courses in any one department where a fee is required the fee for each course must be paid; but one deposit only is required under the same conditions.

The fees and deposits charged each semester in the different courses are as follows:

FEES AND DEPOSITS, 1912–1913	*Fees*	*Deposits*
Chemistry, Courses 2, 4, 5, 6, 28, 30, 40, 45, 60, each	$2.50	$5.00
Geology, Course 23b		5.00
Mineralogy, Courses 1a and 1b, each	2.50	
Mineralogy, Course 25		5.00
Mining and Metallurgy, Course 30	10.00	
Mining and Metallurgy, Course 32, First semester	5.00	
Second semester	7.50	
Civil Engineering, Courses 21, 25, 35, each		5.00
Mechanic Arts, Courses 1, 2, 3, 4, each	2.00	
Physics, Courses 1, 24, 40	1.00	5.00
Physics, Courses 3, 21, each	2.00	5.00
Zoology, Courses 1, 10, each	1.00	2.00
Zoology, Courses 2, 23, 24, 40, each	2.00	2.00
Dairying Courses 1, 21, 23, each	1.00	1.00
Agronomy, Course 29	10.00	
Hygiene, Courses 1, 22, 23, each	$2.00	$2.00
Botany, Courses 1, 2, 3, each	1.00	2.00
Botany, Course 25	2.00	2.00
Horticulture, Course 1	2.00	
Cooking	1.00	
Sewing	1.00	
Typewriting	1.00	
History Syllabus (according to work being done)	.50 to $1.00	

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES

	Low	*Moderate*	*Liberal*
Tuition	None	None	None
Board, 36 weeks	$144	$144	$250
Room, light and fuel	18	18	72
Washing and sundries	20	30	40
Text-books and stationery	8	12	18
Laboratory and athletic fees	10	15	17
Totals	$200	$219	$397

AID TO STUDENTS

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework, and dining-hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

A few annual scholarships have been given for the purpose of assisting deserving students. These have been described in detail on pages 62 and 63.

LOAN SCHOLARSHIP FUND

The Nevada State Federation of Women's Clubs has established a scholarship fund for the State University, to be loaned to worthy young women students in amounts varying to suit individual needs. An applicant must be recommended by a Club belonging to the State Federation. The money thus loaned is to be returned to the fund at the borrower's convenience without interest. Students desiring to take advantage of this offer will apply to Miss Emma Vanderlieth, State Chairman of Committee on Student Loan Fund, Carson City, or to Mrs. F. G. Patrick, Chairman of the Local Work in the Twentieth Century Club, Reno.

MATRICULATION

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credential or examination he is given an admission card by the Registrar. This card must be presented to the Librarian before any

books can be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION

METHOD OF REGISTERING

1. On registration day the student secures from the Registrar a student registration blank, upon which his studies for the semester are to be entered and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major and minor professors as advisers.

4. The signature of each instructor must be obtained for courses registered in before the card is deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration, stamped by the Comptroller. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

CLASSIFICATION OF STUDENTS

In registering, a student shall give his status as *Regular, Limited, Partial,* or *Special,* according to the rules following:

1. For "Regular" Freshman standing, a student must be accredited in all the required Preparatory work; or his entrance deficiencies must not exceed one high-school unit, and such deficiencies must be made good by the end of the Sophomore year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having two units of entrance deficiencies may register as a "Limited" Freshman, but these deficiencies must

take precedence over all other work registered for. Unless a student is taking a majority of his work in the University, he shall be classed as a Sub-Freshman student.

4. A "Limited" Sophomore, Junior or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and departmental permission.

7. For the benefit of those students who have not attained entrance rank in the University, the University maintains a Sub-Freshman year in which students can enter who are deficient in two units or less.

ENROLLMENT

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical culture. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the Committee on Registration and of the department concerned.

3. All courses finally enrolled in shall be completed. In

case a course is elective, however, with the permission of the Registration Committee and the department concerned, a student may drop the course any time during the first twelve weeks of the semester, and the course will be canceled from his record. No refund of fee will be made after the first month after registration.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

WORK DONE WITHOUT REGISTERING

Rule adopted by the Registration and Admission and Advanced Standing Committees in joint session on February 1, 1913:

Any work done but not registered for, and for which advanced standing is asked, will be allowed one-half credit. After this date *no* credit will be allowed for work not registered for, except in the case of work done in vacation time.

CONDITIONS AND FAILURES

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registrar's office and may subject the student to admonition, suspension, or dismissal. A student whose work is unsatisfactory may be placed on probation, and may be required to withdraw at any time thereafter if satisfactory improvement is not shown. Students who find it necessary to leave before the close of the year and who expect to return and students desiring to be absent for a period of time, should obtain leave of absence from the Committee on Delinquent Scholarship.

Each instructor will determine the final grade of students by any method that he may consider best adapted to his courses.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department.

3. Only one reexamination may be given for the removal of any condition. The regular time for such reexamination shall be the beginning of the college year.

3. Any condition not removed by the time the course is next repeated becomes a failure and is subject to the rules for failures; but, in case of special students, the Committee on Registration may grant exemption from this rule.

5. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the condition within the prescribed time shall be considered as having failed.

6. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Academic Council shall by vote permit an extension of time or the substitution of another course.

7. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration Committee.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of their respective Colleges or Schools, and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

GRADUATION

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school or college are required. Credit is given for work done in other institutions of similar rank and character.

To students with an average of 90 per cent, or over, in all of the work required for graduation the degree "With Honor" will be given.

THESIS REQUIREMENTS

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

NOTE—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific and literary knowledge and good arrangement and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the Committee on Graduation and Theses not later than the first Monday in November, and all theses should be completed and presented to the Committee on Theses on or before the first day of the final examinations in May.

The thesis should be typewritten upon 8½x11 paper and bound in a 9x11¼ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS
SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE IN CANDIDACY FOR THE DEGREE OF BACHELOR OF ARTS

(Department of History)

By
JOHN EDWARD SMITH
Reno, Nevada
1913

DIPLOMAS AND BACCALAUREATE DEGREES

1. The Degree of Bachelor of Arts is conferred upon students who have completed in a satisfactory manner the four years' work of the College of Arts and Science.

2. The Degree of Bachelor of Science in conferred upon students who have completed in a satisfactory manner the four years' work of the College of Agriculture, the College of Engineering, or the College of Education.

3. A Diploma entitling the holder to a State Teacher's Certificate of High-School Grade, is awarded to students who have completed in a satisfactory manner the four years' work of the College of Education.

4. A Diploma entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded to students who have completed in a satisfactory manner the work of the Junior College of Education.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Courses the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Courses.

A thesis will constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Committee on Graduate Study for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing, but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Courses may appoint. In case semester examinations are taken, the grade received will be averaged with the oral examination and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

DEGREES OF MINING, MECHANICAL, ELECTRICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Electrical Engineer or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Courses and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

The diploma fee for the Master's Degree, or for advanced degree in Engineering is five dollars. (See under Expenses.)

COLLEGE OF ARTS AND SCIENCE

1. SCHOOL OF LIBERAL ARTS
2. SCHOOL OF GENERAL SCIENCE

COLLEGE OF ARTS AND SCIENCE

FACULTY

JOSEPH EDWARD STUBBS[1].....President
ROBERT LEWERS.....Vice- and Acting President, Professor of Elementary and International Law and Municipal Accounting
JAMES EDWARD CHURCH, JR.....Professor of the Latin Language and Literature
LAURA DE LAGUNA.....Professor of the Romanic Languages and Literatures
JEANNE ELIZABETH WIER.....Professor of History and Political Science
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY.....Professor of Botany, Horticulture and Forestry
ROMANZO ADAMS.....Professor of Economics and Sociology
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
JOHN CALVIN WATSON.....Professor of the Greek Language and Literature
GEORGE ORDAHL.....Professor of Education and Psychology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
REUBEN CYRIL THOMPSON.....Associate Professor of Latin and Greek Languages and Literatures
KATE BARDENWERPER.....Assistant Professor of Home Economics
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GRACE ALICE DAY.....Supervisor of Training
ELSIE SAMETH.....Instructor in Physical Education for Women
H. M. ELLIS.....Instructor in English
KATHERINE RIEGELHUTH.....Instructor in German
EDWIN EUGENE WILLIAMS.....Assistant in Chemistry
MARGARET MACK.....Assistant in Biology
S. C. FEEMSTER.....Assistant in History
THOMAS P. WALKER.....Student Assistant in Mathematics

[1]On leave, 1912–13.

AIM

The aim of the College of Arts and Science is twofold:

1. To lay a foundation for the professions, both learned and technical, and

2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

CONDITIONS OF ADMISSION

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons the Faculty and Regents may make exceptions to this rule.

ADMISSION REQUIREMENTS

***Subjects with Credits*[1]**

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

3. Physics	1
4. English History (a)	1
Ancient History (b)	1
Medieval and Modern History (c)	1
American History and Civics (d)	1
5. Latin (a)	1
Latin (b)	1
Latin (c)	1
Latin (d)	1
6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1
11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1
18. Agriculture	½ or 1
19. Manual Training	½

For entrance to the College of Arts and Science, the candidates must present English a and b; Mathematics a and b; and 11 additional units which may be distributed according to the major division selected in the Junior College Course. The specific requirements of the individual divisions are as follows:

Division I—Latin, 4 units; elective, 7 units.

Division II—Language other than English, 2 units; History, 2 units; elective, 7 units.

Division III—Mathematics c; Language other than English, 2 units; Science, 1 unit; elective, 7 units.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Advanced Standing in consultation with the departments concerned.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of their respective Colleges or Schools, and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE

The Degree of Bachelor of Arts is conferred upon students in the College of Arts and Science who have satisfactorily completed, in addition to the requirements of Military Science or Physical Education for Women, work aggregating 120 semester-units credits[1] This work is divided into Junior College and Senior College requirements.

JUNIOR COLLEGE REQUIREMENTS

The Junior College requirements, which represent the requirements of the Freshman and Sophomore years, are as follows: English 1 (6 units), and in addition 12 units from one of the following main divisions, which shall be known as the student's major division, and 6 units from each of the others. However, the specific entrance requirements imposed for the division in which the 12 units are elected must be met.

Division I	Division II	Division III
Latin	History	Mathematics
Greek	Sociology	Zoology
German	Economics	Botany
French	Political Science	Hygiene
Spanish	Psychology	Geology
English		Chemistry
		Physics

Furthermore, two subjects begun in the Freshman year and distributed in two of the main divisions must be continued through the Sophomore year.

The remaining units necessary to make a total of sixty may be chosen freely from the departments included in the College of Arts and Science. To students completing this work will be given the Junior Certificate and the title of Associate.

[1]By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

TABLE OF JUNIOR COLLEGE REQUIREMENTS

The following table presents the Junior College requirements in graphic form:

CONTENTS OF DIVISIONS

DIVISION I	DIVISION II	DIVISION III
Latin	History	Mathematics
Greek	Sociology	Zoology
German	Economics	Botany
French	Political Science	Hygiene
Spanish	Psychology	Geology
English		Chemistry
		Physics

ENTRANCE REQUIREMENTS

English a and b	English a and b	English a and b
Mathematics a and b	Mathematics a and b	Mathematics a, b and c
Latin, 4 units[1]	Language other than English, 2 units	Language other than English, 2 units
	History, 2 units	Science, 1 unit
Elective, 7 units	Elective, 7 units	Elective, 7 units

JUNIOR COLLEGE REQUIREMENTS

12 units from Division I	12 units from Division II	12 units from Division III
6 units each from Divisions II and III	6 units each from Divisions I and III	6 units each from Divisions I and II
Military Science (required of men)	Military Science (required of men)	Military Science (required of men)
Physical Education (required of women)	Physical Education (required of women)	Physical Education (required of women)
English 1, 6 units	English 1, 6 units	English 1, 6 units
Elective, 30 units	Elective, 30 units	Elective, 30 units

SENIOR COLLEGE REQUIREMENTS

The Senior College requirements, which represent the requirements of the Junior and Senior years, include a group and free electives in character as follows:

GROUP

The group must embrace two departments and must consist of courses aggregating not fewer than twenty-four nor more than thirty-six units of Senior College work. This

[1]Pending revision of the entrance requirements, three years of Latin, with one year of French or Spanish, will be accepted from students who wish to take courses in the latter subjects.

group need not necessarily lie within the division selected as the major division in fulfilling the Junior College requirements. Of these courses not fewer than twelve nor more than twenty-four units must be in one department.

The combined work of the two departments should represent a unity of aim. The particular grouping, however, will depend upon the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
Language—Literature Group	*Social Science Group*
Greek, Latin, French, German English	History, Law, Economics, Sociology
3	4
Biological Science Group	*Physical Science Group*
Zoology, Botany, Chemistry, Geology	Chemistry, Physics, Mathematics Geology, Mineralogy

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to elect a considerable amount of history also. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a Science major will often find it profitable to have a good reading knowledge of French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Advisory Committee, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

FREE ELECTIVES

The remaining units necessary to make a total of sixty may be freely elected from any courses offered in the College of Arts and Science, and from the following additional subjects: Agriculture, Horticulture, Forestry, Veterinary Science,

Metallurgy, Assaying, Agricultural Chemistry, and Surveying, provided that the requirements of the departments in which the work is selected are satisfied.

It is advisable that students should plan their work for the Junior and Senior years as early as the beginning of the Sophomore year, in order that the studies elected then may fit in with their later work.

THESES

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED COUSE IN EDUCATION

Students in the College of Arts and Science may be registered in the College of Education, Advanced Course, during their Junior and Senior years by electing courses in Education aggregating ten hours.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application, including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Courses the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Senior College Courses, four units counting as three, or, where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for Senior College courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Courses.

A thesis shall constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis and shall be presented to the Committee on Graduate Courses for final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing; but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Courses may appoint. In case semester examinations are taken the grade received will be averaged with the oral examinations and the thesis. The Degree of Master of Arts is conferred upon students who have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

COURSES OF INSTRUCTION

I. Greek
II. Latin
III. French
IV. Spanish
V. German
VI. English
VII. Music
VIII. Art
IX. History and Political Science
X. Law
XI. Economics and Sociology
XII. Municipal Accounting
XIII. Education
XIV. Psychology
XV. Zoology
XVI. Hygiene
XVII. Botany
XXV. Home Economics
XXVI. Geology
XXVII. Mineralogy
XXVIII. Chemistry
XXIX. Physics
XXXI. Mathematics
XXXVIII. Military Science and Tactics
XL. Physical Education for Women

1. GREEK LANGUAGE AND LITERATURE

PROFESSOR WATSON, ASSOCIATE PROFESSOR THOMPSON

Junior College Courses

1. ELEMENTARY. Grammar and exercises. An introductory course designed for those students who wish by somewhat concentrated effort to acquire in one year the ability to read ordinary Attic prose. *First semester. 9–10, M. W.F.; 2–3, T. Th. Five credits.* 202 Morrill Hall. Professor Watson.

2. ELEMENTARY (continued). Grammar, exercises, and Xenophon's Anabasis, Books I–IV. Open to those who have

taken Greek 1, or its equivalent. The successful completion of both courses will admit students to Greek 3. *Second semester. 9–10, W. W. F.; 2–3, T. Th. Five credits.* 202 Morrill Hall. Professor Watson.

3. PLATO AND LYSIAS. Plato's Apology and Crito, and selected orations of Lysias. Open to those who have had Greek 1 and 2, and to those who have satisfied the entrance requirements in Greek. *First semester. 2–3, M.; 10–11, T. Th. Three credits.* 202 Morrill Hall. Professor Watson.

4. HOMER. Introduction to the grammar and prosody of Homer, and to the Ionic dialect, with reading of the Iliad, Books I–VI. *Second semester. 2–3, M.; 10–11, T. Th. Three credits.* 202 Morrill Hall. Professor Watson.

5. GREEK PROSE COMPOSITION (first course). A systematic study of Greek grammar, and the writing of sentences and simple connective narrative. Required of all Greek majors, and open to those taking Greek 3 and 4, and to those who have not already had Greek Composition and are pursuing any of the more advanced courses. *Both semesters. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Watson.

6. THUCYDIDES. ELEGIAC, IAMBIC, AND LYRIC POETS. Reading of Book I of Thucydides, followed by selections from the Elegiac, Iambic, and Lyric Poets. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

7. EURIPIDES AND SOPHOCLES. Introduction to Greek Tragedy, with reading of the Medea of Euripides and the Œdipus Tyrannus of Sophocles, and with some attention to their structure and meters. *Second semester. Hours to be arranged. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

8. GREEK PROSE COMPOSITION (second course). The writing of connected passages based upon authors already read, with special attention to the Greek verb. Open only to those who have taken Greek 5 or its equivalent. *Both semesters. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Watson.

Senior College Courses

21. GREEK LITERATURE—THUCYDIDES. The Sicilian Expedition, Books VI and VII, with some study of the historical

and political aspects of the campaign. *First semester. Hours to be arranged. Three credits.* Associate Professor Thompson.

22. GREEK LITERATURE—HOMER. Rapid reading of the greater part of the Iliad, with some attention to Homeric problems. *Second semester. Hours to be arranged. Three credits.* Professor Watson.

23. GREEK LITERATURE—DEMOSTHENES. Reading of the Oration on the Crown as a masterpiece of eloquence and with special reference to Demosthenes as an orator and statesman. *First semester. Hours to be arranged. Two credits.* Professor Watson.

24. GREEK LITERATURE—THE PASTORAL. Selections from Theocritus, Bion, and Moschus, with a study of the influence of these writers in the history of Pastoral poetry. *Second semester. Hours to be arranged. Two credits.* Professor Watson.

25. GREEK LITERATURE—PLATO. Reading of the greater portion of the Republic of Plato, with a brief study of the History of Ancient Philosophy. *First semester. Hours to be arranged. Three credits.* Professor Watson.

26. GREEK LITERATURE—TRAGEDY. Reading of the Antigone of Sophocles, and the Prometheus Bound and the Agamemnon of Æschylus. Studies in the development of Tragedy, and in the dramatic construction and presentation of the plays read. *Second semester. Hours to be arranged. Three credits.* Professor Watson.

27. GREEK LITERATURE—HERODOTUS. The Persian Wars, Books VI–IX, with due attention to their historical and military aspects. *First semester. Hours to be arranged. Two credits.* Professor Watson.

28. GREEK LITERATURE—HOMER. Rapid reading of large portions of the Odyssey, with study of literary influence of the Homeric Epics. *First semester. Hours to be arranged. Two credits.* Professor Watson.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged. Two credits.* Professor Watson.

Courses 21, 22, 27, and 28 will be given in 1913–14 and in alternate years; Courses 23, 24, 25, and 26 in 1914–15 and in alternate years.

II. LATIN LANGUAGE AND LITERATURE

PROFESSOR CHURCH, PROFESSOR WATSON, ASSOCIATE PROFESSOR THOMPSON

LATIN D. VERGIL. This course is intended for such students as present only three years of Latin at entrance, but wish to continue the study in the College. *Both semesters. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

NOTE—A course in Cicero will be organized for students who present only two years of Latin, if a sufficient number apply for it.

Junior College Courses

1. CICERO. The De Senectute and Cicero's Letters. *First semester, 10–11, W. W. F. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

2. HORACE AND CATULLUS. Latin Lyric Poetry. *Second semester, 10–11, M. W. F. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

3. LATIN PROSE COMPOSITION. Required of all students who have elected Latin as their major department or who seek recommendation as teachers of Latin. *Both semesters. Hours to be arranged. Two credits.* 205 Stewart Hall. Associate Professor Thompson.

4. PLAUTUS AND TERENCE. The Mostellaria of Plautus, the Phormio of Terence; Comparative Classical Comedy; some study will also be made of vernacular Latin and English derivatives. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

5. VERGIL. Æneid VII–XII, with the study of the Classical Epic. *Second semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

6. LATIN PROSE COMPOSITION (*second course*). Designed particularly for teachers and for candidates for Rhodes Scholarships. *Both semesters. Hours and credits to be arranged.* 202 Morrill Hall. Professor Watson.

7. ROMAN PRIVATE LIFE. Lectures and assigned reading. Illustrated. *First semester. Hours to be arranged. Two credits.* 205 Stewart Hall. Associate Professor Thompson.

8. ROMAN PUBLIC LIFE. Lectures and assigned readings with special reference to the authors read in school. *Second*

semester. Hours to be arranged. Two credits. 205 Stewart Hall. Associate Professor Thompson.

NOTE—Courses 7 and 8 may be taken in either the Junior or Senior College and are advised for prospective teachers of Latin. A knowledge of Latin is not required for these courses.

Senior College Courses

21. COMPARATIVE PASTORAL POETRY. Theocritus to Mantuan. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Church.

22. ROMAN BURIAL INSCRIPTIONS, PROSE AND METRICAL. The study of the essential features of Roman religion and the rise of Christianity. *First semester. Hours to be arranged. One credit.* 202 Morrill Hall. Professor Church.

23. LIVY XXI–XXII. The War with Hannibal. *Second semester. Hours to be arranged. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

24. THE ROMAN NOVEL. Petronius and Apuleius. *First semester. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Church.

25. GREEK AND ROMAN ART AND ARCHÆOLOGY. Illustrated by lantern slides and reproductions. *First semester. Hours to be arranged. Two credits.* 202–203 Morrill Hall. Professor Church

25*a*. ART MASTERPIECES. *Second semester. Hours to be arranged. One credit.* 202–203 Morrill Hall. Professor Church.

26. PATRISTIC AND LATE LATIN; CHURCH HYMNS. *Second semester. Hours to be arranged. Two credits.* 206 Morrill Hall. Professor Church.

27. THE LATIN LANGUAGE. Its broader principles and relation to the Romanic languages. *Second semester. Hours to be arranged. One credit.* 202 Morrill Hall. Professor Church and Associate Professor Thompson.

28. TEACHER'S COURSE. Methods and ideals in teaching Latin; practice teaching. *First semester. Hours to be arranged. Two credits.* Associate Professor Thompson.

29. ROMAN SATIRE. JUVENAL. *First semester. Hours to be arranged. Three credits.* 205 Stewart Hall. Associate Professor Thompson.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged. Two credits.* Library. Professor Church and Associate Professor Thompson.

Graduate Courses

41. TACITUS. Annals. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Church.

42. ANCIENT CLASSICAL MYTHOLOGY. Its religious and literary forms. *Second semester. Hours to be arranged. One credit.* 202 Morrill Hall. Professor Church.

60. SEMINAR FOR GRADUATES. The Study of the Winds in Classical Poetry from Homer to Ovid. *Both semesters. Three credits.* Library. Professor Church and Professor Watson.

III. FRENCH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Junior College Courses

1. BEGINNING FRENCH. Drill in grammar and in translating simple English into French, and French into English. *Both semesters, 8–9, M. W. F.. Six credits.* 104 Stewart Hall. Professor de Laguna.

2. SECOND-YEAR FRENCH. Translation of such texts as Daudet's Selected Stories, Duma's Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoleon, Extraits de Memoires et d'Histoires, and Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9–10, M. W. F. Six credits.* 104 Stewart Hall. Professor de Laguna.

Senior College Courses

23. CLASSICAL FRENCH. Selected plays of Molière, Racine, Corneille, Voltaire, La Fontaine's Fables. Boileau: L'Art Poetique. A synopsis or critique of each play read is required. *Prerequisite:* French 1 and 2. *Both semesters.* 104 Stewart Hall. Professor de Laguna.

24. FRENCH POETRY. French poetry from Villon to recent times. A study of versification. Essays in French on authors studied are required. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. Four credits.* 104 Stewart Hall. (Not given in 1913–14.) Professor de Laguna.

25. MODERN FRENCH PROSE. Rapid reading of French novels and short stories. Essays in French of authors read

are required. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. Four credits.* 104 Stewart Hall. (Not given in 1913–14). Professor de Laguna.

26. ADVANCED PROSE COMPOSITION. Arranged to accompany French 24 and 25. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. Two credits.* 104 Stewart Hall. (Not given in 1913–14.) Professor de Laguna.

27. MODERN FRENCH DRAMATISTS. Masterpieces of nineteenth century drama—Hugo, Rostand, etc. Papers in French on works read, and biographies of authors required. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. Four credits.* 104 Stewart Hall. Professor de Laguna.

28. GENERAL SURVEY OF FRENCH LITERATURE. History of French literature, with a detailed study of special periods. A considerable amount of reading is done in and out of class, with reports on authors read. This course is designed especially to accompany French 23 and 27. *Prerequisite:* French 1 and 2. *Both semesters. Hours to be arranged. Two credits.* 104 Stewart Hall. Professor de Laguna.

NOTE—Students presenting French 1 and 2 for entrance may take senior college courses during their junior college years.

40. SEMINAR FOR UNDERGRADUATES. Old French; grammar, phonetics, morphology, syntax. Reading: Chanson de Roland, Chretien de Troyes, Chevalier au Lion. *Both semesters. Hours to be arranged. Two credits.* 104 Stewart Hall. Professor de Laguna.

IV. SPANISH LANGUAGE AND LITERATURE

PROFESSOR DE LAGUNA

Junior and Senior College Courses

21. BEGINNING SPANISH. The course in Spanish has been laid out for those students who have had at least two years work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from text-book work is devoted to Spanish conversation. *Prerequisite:* Two years of Latin and two of French, or an equivalent. *Both semesters. Hours to be arranged. Four credits.* 104 Stewart Hall. Professor de Laguna.

22. ADVANCED SPANISH. Modern Spanish novels, and plays by standard authors—Valera: Pepita Jiménez; Gal-

dós: Marianela; Alarcón: Capitan Veneno; Echegaray: O Lucura ó Santidad; Gil y Zarate: Guzman el Bueno. *Prerequisite:* Spanish 21, or two years of high-school Spanish. *Both semesters. Four credits.* 104 Stewart Hall. Professor de Laguna.

23. CLASSICAL SPANISH. Lope de Vega: La Estrella de Sevilla; Calderon: El Principe Constante; Moreto: El Desden con el Desden; selections from Cervante's Don Quijote. *Prerequisite:* Spanish 21 and 22. *Both semesters. Two credits. Hours to be arranged.* 104 Stewart Hall. (Not given in 1913–14, unless there is sufficient demand for it.) Professor de Laguna.

V. GERMAN LANGUAGE AND LITERATURE

MISS RIEGLEHUTH

Junior College Courses

1. ELEMENTARY GERMAN. Pronounciation, accidence, and rules of syntax, with reading of prose and translation of short sentences into German. The basis for the study of grammar is Thomas's Practical German Grammar. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Miss Riegelhuth.

2. NARRATIVE PROSE. Reading of selected narrative prose. Study of word formation, syntax, memorizing of idioms, and the translation of easy English prose into German. Such authors as Wildbrandt, Eichendorf and Gerstäcker will be read. *Prerequisite:* German 1, or two years of high-school German. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Miss Riegelhuth.

3. AN INTRODUCTION TO THE CLASSICS. Study of the lives of Lessing, Schiller, and Gœthe. Reading of representative works. Composition based on text read. *Prerequisite:* Same as for German 2. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Miss Riegelhuth.

10. SCIENTIFIC GERMAN. Reading of scientific prose. Composition and exercises. *Prerequisite:* German 1, or two years of high-school German. *Both semesters. Four credits. Hours to be arranged.* 5 Morrill Hall. Miss Riegelhuth.

Senior College Courses

22. THE GERMAN NOVEL. Criticisms and themes. Such authors as Riehl, Freytag, Fulda and Hauff will be read. *Prerequisite:* German 2 or 3, or three years of high-school

German. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Mall. Miss Riegelhuth.

23. HISTORY OF GERMAN LITERATURE. Collateral reading. Exercises and themes. *Prerequisite:* Same as for German 22. 5 Morrill Hall. Miss Riegelhuth.

24. HISTORY OF XIX CENTURY DRAMA. Study of Witowski's work and a consideration of Freytag's "Technique of the Drama." Collateral reading. Such authors as von Kleist, Hebbel, Wagner and Sudermann, will be read. *Prerequisite:* German 22 or 23, or four years of high-school German. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Miss Riegelhuth.

25. GERMAN POETRY. Study of the lyrics and ballads. Reading of important poems of such authors as Schiller, Scheffel and Hauptman. *Prerequisite:* German 22 or 23. *Both semesters. Six credits. Hours to be arranged.* 5 Morrill Hall. Miss Riegelhuth.

40. STUDY AND INTERPRETATION OF GOETHE'S FAUST. Exercises and themes. This course is primarily for those majoring in German. It may be taken in addition to German 24 or 25, but cannot be substituted for either of them. *Both semesters. Four credits. Hours to be arranged.* 5 Morrill Hall. Miss Riegelhuth.

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. ELLIS

Junior College Courses

0. COMPOSITION AND RHETORIC. A course designed for students who are not equipped to pursue English 1. *No credits.* Mr. Ellis.

1. COMPOSITION AND RHETORIC. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 8–9, M. W. F.; Section 2, 9–10, T. Th. S.; Section 3, 10–11, M. W. F. Six credits.* 102 Stewart Hall. Mr. Ellis.

2. COMPOSITION AND RHETORIC. The work follows the lines of English 1, with particular reference to the needs of students in Engineering and Agriculture. *Both semesters, M. W. F., 8–9. Six credits.* Mr. Ellis.

2*a*. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. *Prerequisite:* Eng-

lish 1. *First semester. Hours to be arranged. Two credits.* 102 Stewart Hall. Mr. Ellis.

2*b*. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisite:* English 1 and 2*a*. *Second semester. Hours to be arranged. Two credits.* 102 Stewart Hall. Mr. Ellis.

3. ARGUMENTATION. The preparation of briefs and the presentation of arguments. *Both semesters. Hours to be arranged. Four credits.* Mr. Ellis.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, 9–10, M. W. F. Six credits.* Mackay Mining Building. Professor Hill.

5. THE SHORT STORY. The study of the short story as a type and practice in writing short stories. *Prerequisite:* English 1, 2*a* and 2*b*. *Both semesters. Hours to be arranged. Four credits.* Mackay Mining Building. Professor Hill.

Senior College Courses

ENGLISH LANGUAGE

27. CHAUCER. The Canterbury Tales. *Prerequisite:* English 1 and 4. *Three credits. First semester, 2–3, M. W. F.* Mackay Mining Building. Professor Hill.

29. OLD ENGLISH. Grammar and reading of simple prose and verse. *Prerequisite:* English 1 and 4. (This course alternates with 27.) Not given in 1913–14.

30. BEOWULF. *Prerequisite:* English 1, 4 and 29. (This course alternates with 28.) Not given in 1913–14.

ENGLISH LITERATURE

25. LITERATURE OF THE NINETEENTH CENTURY. (1) General survey of the period. (2) Tennyson and Browning. *Prerequisite:* English 1 and 4. (This course alternates with 26.) Not given in 1913–14.

26. SHAKESPEARE. The interpretation of six plays. *Prerequisite:* English 1 and 4. *Both semesters, 10–11, M. W. F. Six credits.* Mackay Mining Building. Professor Hill.

28. MILTON. Minor poems and Paradise Lost. *Prerequisite:* English 1 and 4. *Second semester, 2–3, M. W. F. Three credits.* Mackay Mining Building. Professor Hill.

31. THE MODERN DRAMA. Ibsen, Maeterlinck, Pinero,

Shaw. *Both semesters, 10–11, T. Th. Four credits.* 102 Stewart Hall. Mr. Ellis.

32. THE NOVEL. A rapid survey of the history and development of the novel, followed by a more thorough study of the Nineteenth Century novels. (This course alternates with 31.) Not given in 1913–14. Mr. Ellis.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged with individual students. Two credits.* Library. Professor Hill.

VII. MUSIC

Junior and Senior College Courses

PUBLIC SCHOOL MUSIC. Text-book, Song Reader, McLaughlin and Gilchrist.

1. ELEMENTS OF MUSIC. Musical notations and terms, rhythmic and melodic problems, sight singing, ear training, part work, technical fundamentals. *Both semesters. Hours and credits to be arranged.* 206 Morrill Hall.

2. PRIMARY METHODS. Presentation of each technical problem in order; study of child voice; voice training; interpretation of songs; individual practice. *First semester. Hours and credits to be arranged.* 206 Morrill Hall.

3. GRAMMAR METHODS. Presentation of each technical problem in order; further voice drill, musical interpretation; individual practice; study of different public school textbooks and publishing houses; working programs; repertoire of songs. *Second semester. Hours and credits to be arranged.* 206 Morrill Hall.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Junior College Courses

1. ART. Drawing: Antique life and still life. Painting: From nature in oils and water colors. Ornaments: Historic ornament and conventionalization. Clay modeling. *Hours and credits to be arranged.* Physics Building. Miss Lewers.

For description of other courses in Art, see College of Education.

IX. HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER, MR. FEEMSTER

Junior College Courses

1. MEDIEVAL EUROPE. A general survey of the history of Western Europe from the Barbarian Invasions through the

Renaissance. *Both semesters. 9–10, M. W. F. Six credits.* 203 Morrill Hall. Mr. Feemster.

2. MODERN EUROPE, 1500–1900. A general course with emphasis upon the change from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. *Open to students who have had Course 1 or a satisfactory equivalent. Both semesters. Four credits.* 203 Morrill Hall. Mr. Feemster.

3. WOMAN IN HISTORY. A study of the position and influence of woman in various ages and among different nations will be followed by lectures upon the vocations now open to women and the significance of college education in preparation for the same. Lectures on various vocations will be given by representatives of these vocations and professions. Especially designed with reference to the needs of Freshman women, but open to all women students. *Both semesters. M. Two credits.* 203 Morrill Hall. Professor Wier.

4. AMERICAN HISTORY. A general course covering the chief facts of United States History. Designed for students in the Junior College of Education and for those who enter the University with a deficiency in American History. *Both semesters. Hours to be arranged. Six credits.* 203 Morrill Hall. Mr. Feemster.

Senior College Courses

23. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for the study of law. Not given in 1913–14. *Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

25. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES, 1775–1848. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Both semesters. Six credits.* 203 Morrill Hall. Mr. Feemster.

26. WESTWARD EXPANSION OF THE UNITED STATES. A study of the westward movement from the Atlantic to the Pacific and of the economic influence of the West upon political and constitutional affairs. Particular attention will be given to political, economic, and social aspects of the acquisition of the various sections. *Open to students who have had Course 25 or its equivalent in American history. Both semesters. M. W. F. Four credits.* 203 Morrill Hall. Professor Wier.

27. HISTORY OF NEVADA. Lectures on the political and constitutional history of the State. *Free elective for all students. Both semesters. Two credits.* 203 Morrill Hall. Professor Wier. (Not given in 1913–14.)

29. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoint rather than as a French local crisis. *Both semesters. Four credits.* 203 Morrill Hall. Professor Wier. (Not given in 1913–14.)

30. HISTORY OF THE PACIFIC SLOPE. *Complementary to Course 26. Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

31. PRINCIPLES AND PRACTICE OF POLITICS. *Intended primarily for Senior College students, but open to Junior College students with permission of the instructor. Both semesters. Four credits.* 203 Morrill Hall. Mr. Feemster.

32. COLONIAL GOVERNMENT. A study of the present government and administration of the colonies of the United States and other countries. *Both semesters. Hours to be arranged. Four credits.* 203 Morrill Hall. Professor Wier.

33. RESEARCH COURSE IN POLITICAL SCIENCE. Thesis course for students who may wish to contest for the Philo C. Bennett prize on "The Principles of Free Government." *Open to Junior College students by permission. Both semesters. Two credits.* 203 Morrill Hall. Professor Wier.

40. HISTORY SEMINAR. *Both semesters. Hours to be arranged. Two credits.* 203 Morrill Hall. Professor Wier.

Fee for History Syllabus, 50 cents to $1 per semester, according to work being done.

X. LAW

PROFESSOR LEWERS

Senior College Courses

21. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester. Hours to be arranged. M. W. F. Three credits.* 301 Morrill Hall. Professor Lewers.

22. INTERNATIONAL LAW. The principles of International Law as set forth by the leading text-writers of America, England, and the Continent. *Second semester. Hours to be*

arranged. M. W. F. Three credits. 301 Morrill Hall. Professor Lewers.

23. ADVANCED LAW. The object of this course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisite:* Law 21 and 22. *Both semesters. Hours to be arranged. M. W. F. Six credits.* 301 Morrill Hall. Professor Lewers.

XI. ECONOMICS AND SOCIOLOGY

PROFESSOR ADAMS

NOTE—On account of the fact that Economics and Sociology are taken by different classes of students, it does not appear to be best to designate some courses as strictly Junior College Courses and others as Senior College Courses. In the case of students who desire but one or two years of work in these subjects, it is better to postpone such work to the Senior College. Students desiring to do their major work in Economics and Sociology should begin the work during their first year in college. Student who choose law or history as a major study may find it advantageous to begin work in Economics at an early period in their course.

Junior and Senior College Courses

1. ECONOMIC HISTORY. An introductory study of the evolution of English and American industry and commerce. *First semester. 1–2, T. Th. Two credits.* 202 Stewart Hall. Professor Adams.

2. ECONOMIC GEOGRAPHY. A study of geographic conditions in relation to industry and commerce, followed by a special study of a few important typical countries. *Second semester. 1–2, T. Th. Two credits.* 202 Stewart Hall. Professor Adams.

3. PRINCIPLES OF ECONOMICS. Lectures and text. *Both semesters. Hours to be arranged. Six credits.* 202 Stewart Hall. Professor Adams.

4. RURAL ECONOMICS. A study of the economic and social aspects of farm life. *First semester. 10–11, M.W. F. Three credits.* 202 Stewart Hall. (Not given in 1913–14.) Professor Adams.

21. PUBLIC FINANCE. Public expenditures, revenues, financial administration, and public debts. *First semester. 9–10, M. W. F. Three credits.* 202 Stewart Hall. (Not given in 1913–14. Professor Adams.

22. MONEY AND BANKING. History and principles. Comparative study of monetary and banking systems. *Second*

semester. 9–10, M. W. F. Three credits. 202 Stewart Hall. (Not given in 1913–14.) Professor Adams.

23. THE STATE IN RELATION TO INDUSTRY. A historical and critical study of various sorts of governmental activity in relation to industry. Present-day problems are considered. *Second semester. Hours to be arranged. Two credits.* 202 Stewart Hall. Professor Adams.

24. THE AMERICAN TARIFF. A critical and historical study. *First semester. Hours to be arranged. Two credits.* 202 Stewart Hall. Professor Adams.

25. HISTORY OF ECONOMIC THOUGHT. A critical review of the leading schools of economic thought since the Sixteenth Century. *First semester. Hours to be arranged. Two credits.* Professor Adams.

31. INTRODUCTION TO THE STUDY OF SOCIETY. The social nature of man. The nature of society. Social institutions. *First semester. Three credits.* Not open to Freshmen. (Not given in 1913–14.) Professor Adams.

32. DELINQUENTS, DEPENDENTS, AND DEFECTIVES. A study of the causes and social treatment of criminals, paupers and defectives. *Second semester. Three credits.* (Not given in 1913–14.) Professor Adams.

33. SOCIAL ORGANIZATIONS. A study of types of social organizations in relation to human nature, to modes of communication and to stages of social evolution. *Second semester. Three credits.* (Not given in 1913–14.) Professor Adams.

40. RESEARCH COURSE. A study of a selected subject—ordinarily an investigation of an economic or sociological question of importance to Nevada. *Both semesters. Hours to be arranged. Credit according to work.* 202 Stewart Hall. Professor Adams.

XII. MUNICIPAL ACCOUNTING

PROFESSOR LEWERS

Junior and Senior College Courses

1. This course is designed to give the fundamental principles underlying systems of accounting for State, county, and city public institutions and corporations. Students taking this should have some knowledge of bookkeeping. *Both semesters. Hours to be arranged. Two credits.* 301 Morrill Hall. Professor Lewers.

Students who desire to take up bookkeeping, typewriting, or stenography, and who can do so without interfering with other studies, may do so provided permission is given by the Registration Committee. Fee for typewriting, $1.

XIII. EDUCATION

PROFESSOR ORDAHL, MISS DAY

Junior College Courses

1. SCIENCE OF EDUCATION. This course is designed to give the background and scientific basis for practice work in Course 3 in Education. The first semester is devoted to the study of elementary principles of psychology in relation to education. In the second semester a more detailed study is made of the learning process. *Both semesters. 10–11, M. W. F.* 101 Stewart Hall. Professor Ordahl, Miss Day.

3. THEORY AND PRACTICE OF TEACHING. Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussion, and private conferences.

(*a*) One hour daily throughout the year is devoted to practice teaching by every student. This includes four units of work, for periods of seven weeks each, in the following subjects: Elementary school English, geography, history, arithmetic. Additional subjects may be arranged if desired. Carefully prepared general and daily lesson plans are submitted to the supervisor and regular grade teacher by the student-teacher before taking charge of a class. After each lesson the student-teacher meets the supervisor in private conference for criticism and suggestions.

(*b*) Two hours each week are spent by the class with the supervisor, observing lessons taught by the city teachers in the various elementary school subjects. These are made the basis of class discussions upon principles and methods of teaching.

(*c*) Three hours each week are devoted to the study of school problems, principles of teaching, and special methods in elementary school English, geography, history, and arithmetic, paralleling the practice teaching.

Only those students who show a disposition to do their best and who are able to achieve reasonable success in teaching will be permitted to continue in this course. From time to time the stronger students are given opportunity to test their power by substituting for the regular teachers in the

city schools in case of sickness. Upon such occasions the student assumes the entire responsibility of the work until the return of the regular teacher, unless this period exceeds one week. *Prerequisite:* Education 1. *Both semesters, 8–9, M. W. F.; 10–11, T. Th., and from 9–10, every day. Ten credits.* Orvis Ring School Building. Miss Day.

NOTE—Education 3 is also open to Senior College students. See same under Senior College Courses.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Psychology 5.) Lectures, readings, observations, and experiment. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

7. CHILD LITERATURE. The study of selected prose and poetry from literature written for and of children and child life. The purpose of the course is a better understanding of child nature through a psychological study of this type of literature. (Given in 1913–14 if a sufficient number of students desire it.) *Both semesters. Hours to be arranged. Two credits.* Orvis Ring Building. Miss Day.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY (Psychology 21.) This course deals with the development of the thought process, the formation of ideals, and social natures of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

23. HISTORY OF EDUCATION. A study of the development of educational ideals from the time of the Greeks and Hebrews to the present, with special reference to the forces which have operated in the evolution of the various historic ideals and practices. *Both semesters, 9–10, M. W. F. Six credits.* 101 Stewart Hall. Professor Ordahl.

3. THEORY AND PRACTICE OF TEACHING. (See Education 3, Junior College Courses.) Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussions, and

private conferences. *Prerequisite:* Education 21, or Psychology 1 and 3. *Both semesters, 8–9, M. W. F., 10–11, T. Th., and any hour from 9 to 3 for practice teaching.* Orvis Ring School Building. Miss Day.

XIV. PSYCHOLOGY

Junior College Courses

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes, and the emotional life. *Prerequisite or parallel:* Hygiene 1, or Zoology 5. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings and laboratory work. A comparative study is made of the most recent experimental work on the genesis and function of consciousness in animal and human behavior. *Second semester. Lectures, 8–9, M. W. F. Laboratory, two one-hour periods per week, 1–2 or 2–3, T. Th. Three credits.* 101 Stewart Hall. Professor Ordahl.

NOTE—Psychology 1 and 3 should be taken in the Sophmore year.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Education 5.) Lectures, readings, observations, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. (Education 21.) This course deals with the development of the thought process, the formation of ideals, and social natures of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

22. GENETIC AND SOCIAL PSYCHOLOGY. A study of human behavior through the various stages of civilization, with special reference to the analysis of the psychic factors underlying the evolution of typical moral, ethical, and esthetic ideals. *Prerequisite:* Psychology 1 and 2. *Both semesters.*

Hours to be arranged. Four credits. (Not given in 1913–1914.) Professor Ordahl.

XV. ZOOLOGY

PROFESSOR FRANDSEN, PROFESSOR DOTEN

Junior College Courses

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. Laboratory, 2–4:40, M. W. Four credits.* 202 Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anatomy in the high school, and as a preparation for research work in anatomy. *Prerequisite:* Zoology 1 and Hygiene 1. *Both semesters, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Ten credits. (Alternates with Courses 23 and 24.)* 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

5. NEUROLOGY. Lectures, demonstrations and occasional laboratory exercise on the structure and physiology of the human nervous system. *Designed to give the necessary preparation for Psychology 1. First semester. Hours to be arranged.* 301 Hatch Hall. Professor Frandsen.

10. ECONOMIC ZOOLOGY. Lectures dealing with the habits and life histories of the more important economic vertebrates, insects and other arthropods, worms, and protozoa in their relations to agriculture. One laboratory period per week. *Second semester. Three credits. (Given in alternate years to Juniors and Seniors in Agriculture.)* 301 Hatch Hall and Field. Professor Frandsen, Professor Doten. Fee, $1 per semester; deposit, $2.

Senior College Courses

23. HISTOLOGY. The methods of killing, fixing, sectioning, staining and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different

Renaissance. *Both semesters. 9–10, M. W. F. Six credits.* 203 Morrill Hall. Mr. Feemster.

2. MODERN EUROPE, 1500–1900. A general course with emphasis upon the change from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. *Open to students who have had Course 1 or a satisfactory equivalent. Both semesters. Four credits.* 203 Morrill Hall. Mr. Feemster.

3. WOMAN IN HISTORY. A study of the position and influence of woman in various ages and among different nations will be followed by lectures upon the vocations now open to women and the significance of college education in preparation for the same. Lectures on various vocations will be given by representatives of these vocations and professions. Especially designed with reference to the needs of Freshman women, but open to all women students. *Both semesters, M. Two credits.* 203 Morrill Hall. Professor Wier.

4. AMERICAN HISTORY. A general course covering the chief facts of United States History. Designed for students in the Junior College of Education and for those who enter the University with a deficiency in American History. *Both semesters. Hours to be arranged. Six credits.* 203 Morrill Hall. Mr. Feemster.

Senior College Courses

23. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for the study of law. (Not given in 1913–14.) *Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

25. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES, 1775–1840. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Both semesters. Six credits.* 203 Morrill Hall. Mr. Feemster.

26. WESTWARD EXPANSION OF THE UNITED STATES. A study of the westward movement from the Atlantic to the Pacific and of the continuous influence of the West upon national and international affairs. Particular attention will be given to political, economic, and social aspects of the occupation of the various sections. *Open to all students who give evidence of satisfactory knowledge of American history. Both semesters, 9, T. Th. Four credits.* 203 Morrill Hall. Professor Wier.

27. HISTORY OF NEVADA. Lectures on the political and constitutional history of the State. *Free elective for all students. Both semesters. Two credits.* 203 Morrill Hall. Professor Wier. (Not given in 1913–14.)

29. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoint rather than as a French local crisis. *Both semesters. Four credits.* 203 Morrill Hall. Professor Wier. (Not given in 1913–14.)

30. HISTORY OF THE PACIFIC SLOPE. *Complementary to Course 26. Both semesters. Four credits.* 203 Morrill Hall. Professor Wier.

31. PRINCIPLES AND PRACTICE OF POLITICS. *Intended primarily for Senior College students, but open to Junior College students with permission of the instructor. Both semesters. Four credits.* 203 Morrill Hall. Mr. Feemster.

32. COLONIAL GOVERNMENT. A study of the present government and administration of the colonies of the United States and other countries. *Both semesters. Hours to be arranged. Four credits.* 203 Morrill Hall. Professor Wier.

33. RESEARCH COURSE IN POLITICAL SCIENCE. Thesis course for students who may wish to contest for the Philo C. Bennett prize on "The Principles of Free Government." *Open to Junior College students by permission. Both semesters. Two credits.* 203 Morrill Hall. Professor Wier.

40. HISTORY SEMINAR. *Both semesters. Hours to be arranged. Two credits.* 203 Morrill Hall. Professor Wier.

Fee for History Syllabus, 50 cents to $1 per semester, according to work being done.

X. LAW

PROFESSOR LEWERS

Senior College Courses

21. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester. Hours to be arranged. M. W. F. Three credits.* 301 Morrill Hall. Professor Lewers.

22. INTERNATIONAL LAW. The principles of International Law as set forth by the leading text-writers of America, England, and the Continent. *Second semester. Hours to be*

arranged. M. W. F. Three credits. 301 Morrill Hall. Professor Lewers.

23. ADVANCED LAW. The object of this course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisite:* Law 21 and 22. *Both semesters. Hours to be arranged. M. W. F. Six credits.* 301 Morrill Hall. Professor Lewers.

XI. ECONOMICS AND SOCIOLOGY

PROFESSOR ADAMS

NOTE—On account of the fact that Economics and Sociology are taken by different classes of students, it does not appear to be best to designate some courses as strictly Junior College Courses and others as Senior College Courses. In the case of students who desire but one or two years of work in these subjects, it is better to postpone such work to the Senior College. Students desiring to do their major work in Economics and Sociology should begin the work during their first year in college. Student who choose law or history as a major study may find it advantageous to begin work in Economics at an early period in their course.

Junior and Senior College Courses

1. ECONOMIC HISTORY. An introductory study of the evolution of English and American industry and commerce. *First semester. 1–2, T. Th. Two credits.* 202 Stewart Hall. Professor Adams.

2. ECONOMIC GEOGRAPHY. A study of geographic conditions in relation to industry and commerce, followed by a special study of a few important typical countries. *Second semester. 1–2, T. Th. Two credits.* 202 Stewart Hall. Professor Adams.

3. PRINCIPLES OF ECONOMICS. Lectures and text. *Both semesters. Hours to be arranged. Six credits.* 202 Stewart Hall. Professor Adams.

4. RURAL ECONOMICS. A study of the economic and social aspects of farm life. *First semester. 10–11, M. W. F. Three credits.* 202 Stewart Hall. (Not given in 1913–14.) Professor Adams.

21. PUBLIC FINANCE. Public expenditures, revenues, financial administration, and public debts. *First semester. 9–10, M. W. F. Three credits.* 202 Stewart Hall. (Not given in 1913–14. Professor Adams.

22. MONEY AND BANKING. History and principles. Comparative study of monetary and banking systems. *Second*

semester. 9–10, M. W. F. Three credits. 202 Stewart Hall. (Not given in 1913–14.) Professor Adams.

23. THE STATE IN RELATION TO INDUSTRY. A historical and critical study of various sorts of governmental activity in relation to industry. Present-day problems are considered. *Second semester. Hours to be arranged. Two credits.* 202 Stewart Hall. Professor Adams.

24. THE AMERICAN TARIFF. A critical and historical study. *First semester. Hours to be arranged. Two credits.* 202 Stewart Hall. Professor Adams.

25. HISTORY OF ECONOMIC THOUGHT. A critical review of the leading schools of economic thought since the Sixteenth Century. *First semester. Hours to be arranged. Two credits.* Professor Adams.

31. INTRODUCTION TO THE STUDY OF SOCIETY. The social nature of man. The nature of society. Social institutions. *First semester. Three credits.* Not open to Freshmen. (Not given in 1913–14.) Professor Adams.

32. DELINQUENTS, DEPENDENTS, AND DEFECTIVES. A study of the causes and social treatment of criminals, paupers and defectives. *Second semester. Three credits.* (Not given in 1913–14.) Professor Adams.

33. SOCIAL ORGANIZATIONS. A study of types of social organizations in relation to human nature, to modes of communication and to stages of social evolution. *Second semester. Three credits.* (Not given in 1913–14.) Professor Adams.

40. RESEARCH COURSE. A study of a selected subject—ordinarily an investigation of an economic or sociological question of importance to Nevada. *Both semesters. Hours to be arranged. Credit according to work.* 202 Stewart Hall. Professor Adams.

XII. MUNICIPAL ACCOUNTING

PROFESSOR LEWERS

Junior and Senior College Courses

1. This course is designed to give the fundamental principles underlying systems of accounting for State, county, and city public institutions and corporations. Students taking this should have some knowledge of bookkeeping. *Both semesters. Hours to be arranged. Two credits.* 301 Morrill Hall. Professor Lewers.

Students who desire to take up bookkeeping, typewriting, or stenography, and who can do so without interfering with other studies, may do so provided permission is given by the Registration Committee. Fee for typewriting, $1.

XIII. EDUCATION

PROFESSOR ORDAHL, MISS DAY

Junior College Courses

1. SCIENCE OF EDUCATION. This course is designed to give the background and scientific basis for practice work in Course 3 in Education. The first semester is devoted to the study of elementary principles of psychology in relation to education. In the second semester a more detailed study is made of the learning process. *Both semesters. 10–11, M. W. F.* 101 Stewart Hall. Professor Ordahl, Miss Day.

3. THEORY AND PRACTICE OF TEACHING. Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussion, and private conferences.

(*a*) One hour daily throughout the year is devoted to practice teaching by every student. This includes four units of work, for periods of seven weeks each, in the following subjects: Elementary school English, geography, history, arithmetic. Additional subjects may be arranged if desired. Carefully prepared general and daily lesson plans are submitted to the supervisor and regular grade teacher by the student-teacher before taking charge of a class. After each lesson the student-teacher meets the supervisor in private conference for criticism and suggestions.

(*b*) Two hours each week are spent by the class with the supervisor, observing lessons taught by the city teachers in the various elementary school subjects. These are made the basis of class discussions upon principles and methods of teaching.

(*c*) Three hours each week are devoted to the study of school problems, principles of teaching, and special methods in elementary school English, geography, history, and arithmetic, paralleling the practice teaching.

Only those students who show a disposition to do their best and who are able to achieve reasonable success in teaching will be permitted to continue in this course. From time to time the stronger students are given opportunity to test their power by substituting for the regular teachers in the

city schools in case of sickness. Upon such occasions the student assumes the entire responsibility of the work until the return of the regular teacher, unless this period exceeds one week. *Prerequisite:* Education 1. *Both semesters, 8–9, M. W. F.; 10–11, T. Th., and from 9–10, every day. Ten credits.* Orvis Ring School Building. Miss Day.

NOTE—Education 3 is also open to Senior College students. See same under Senior College Courses.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Psychology 5.) Lectures, readings, observations, and experiment. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

7. CHILD LITERATURE. The study of selected prose and poetry from literature written for and of children and child life. The purpose of the course is a better understanding of child nature through a psychological study of this type of literature. (Given in 1913–14 if a sufficient number of students desire it.) *Both semesters. Hours to be arranged. Two credits.* Orvis Ring Building. Miss Day.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY (Psychology 21.) This course deals with the development of the thought process, the formation of ideals, and social natures of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

23. HISTORY OF EDUCATION. A study of the development of educational ideals from the time of the Greeks and Hebrews to the present, with special reference to the forces which have operated in the evolution of the various historic ideals and practices. *Both semesters, 9–10, M. W. F. Six credits.* 101 Stewart Hall. Professor Ordahl.

3. THEORY AND PRACTICE OF TEACHING. (See Education 3, Junior College Courses.) Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussions, and

private conferences. *Prerequisite:* Education 21, or Psychology 1 and 3. *Both semesters, 8–9, M. W. F., 10–11, T. Th., and any hour from 9 to 3 for practice teaching.* Orvis Ring School Building. Miss Day.

XIV. PSYCHOLOGY

Junior College Courses

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes, and the emotional life. *Prerequisite or parallel:* Hygiene 1, or Zoology 5. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings and laboratory work. A comparative study is made of the most recent experimental work on the genesis and function of consciousness in animal and human behavior. *Second semester. Lectures, 8–9, M. W. F. Laboratory, two one-hour periods per week, 1–2 or 2–3, T. Th. Three credits.* 101 Stewart Hall. Professor Ordahl.

NOTE—Psychology 1 and 3 should be taken in the Sophmore year.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Education 5.) Lectures, readings, observations, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. (Education 21.) This course deals with the development of the thought process, the formation of ideals, and social natures of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

22. GENETIC AND SOCIAL PSYCHOLOGY. A study of human behavior through the various stages of civilization, with special reference to the analysis of the psychic factors underlying the evolution of typical moral, ethical, and esthetic ideals. *Prerequisite:* Psychology 1 and 2. *Both semesters.*

Hours to be arranged. Four credits. (Not given in 1913–1914.) Professor Ordahl.

XV. ZOOLOGY

PROFESSOR FRANDSEN, PROFESSOR DOTEN

Junior College Courses

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. Laboratory, 2–4:40, M. W. Four credits.* 202 Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anatomy in the high school, and as a preparation for research work in anatomy. *Prerequisite:* Zoology 1 and Hygiene 1. *Both semesters, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Ten credits. (Alternates with Courses 23 and 24.)* 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

5. NEUROLOGY. Lectures, demonstrations and occasional laboratory exercise on the structure and physiology of the human nervous system. *Designed to give the necessary preparation for Psychology 1. First semester. Hours to be arranged.* 301 Hatch Hall. Professor Frandsen.

10. ECONOMIC ZOOLOGY. Lectures dealing with the habits and life histories of the more important economic vertebrates, insects and other arthropods, worms, and protozoa in their relations to agriculture. One laboratory period per week. *Second semester. Three credits. (Given in alternate years to Juniors and Seniors in Agriculture.)* 301 Hatch Hall and Field. Professor Frandsen, Professor Doten. Fee, $1 per semester; deposit, $2.

Senior College Courses

23. HISTOLOGY. The methods of killing, fixing, sectioning, staining and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different

years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisite* Zoology 1 and 2, Hygiene 1. *First semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits.* 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit $2.

24. EMBRYOLOGY. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick and pig at successive stages of development. *Prerequisite:* Zoology, 1, 2, 23, and Hygiene 1. *Second semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits.* 202 Hatch Hall. Professor Frandsen. Courses 23 and 24 alternate with Course 2. Fee, $2 per semester; deposit, $2.

28. EVOLUTION. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon science and life in general. *Second semester. Hours to be arranged. Two credits.* Professor Frandsen.

40. RESEARCH COURSE. Students electing Zoology as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects selected from the different lines of zoological research, anatomy, physiology, histology, and embryology will be submitted to the choice of the student. If desired a student may elect thesis work in excess of the minimum one credit required. *Both semesters. Hours and credits to be arranged with individual student.* 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

XVI. HYGIENE

PROFESSOR FRANDSEN, MISS MACK

Junior College Courses

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, F. Six credits.* 301 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

Senior College Courses

22. MICROBIOLOGY. Lectures and laboratory exercises on the morphology and life processes of the bacteria. *Prerequisite:* Hygiene 1, Botany 1, and Zoology 1. *First semester. Hours to be arranged. Four credits.* 301 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

23. MICROBIOLOGY. A continuation of Hygiene 22, dealing with plant microbe other than bacteria, and with the protozoa. *Prerequisite:* Hygiene 22. *Second semester. Hours to be arranged. Four credits.* 301 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

XVII. BOTANY

PROFESSOR KENNEDY, PROFESSOR FRANDSEN, MISS MACK

Junior College Courses

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to the environmental forces. Illustrated by lantern slides and demonstrations. *Second semester, 8–9, T. W. Laboratory, 2–4:30, M. W. Four credits.* 301 Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

2. CRYPTOGAMIC BOTANY. A general resume of plant life from the lowest to the highest forms; slime, moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:20, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

3. COMPARATIVE HISTOLOGY OF PLANTS. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. *Prerequisite:* Botany 1 and 2. *First semester. Lectures, 9–10, M.W. Laboratory, 2–4:30, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

Senior College Courses

25. PHYSIOLOGICAL BOTANY. A course of experiments similar to that outlined in McDougal's Plant Physiology. *Prerequisite:* Botany 1, 2, and 3. *Second semester. Hours and credits to be arranged.* Professor Frandsen. Fee, $2 per semester; deposit, $2.

40. RESEARCH COURSE. This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Both semesters. Hours to be arranged. Four credits.* 303 Stewart Hall. Professor Kennedy.

XXV. HOME ECONOMICS

ASSISTANT PROFESSOR BARDENWERPER

1*a*. TEXTILES. Hygienic and historic dress. Studies in color and design in relation to dress. Lectures on choice of design, color and material in home decoration. Practice work in cutting, fitting and designing. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

2*a*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

3*a*. HISTORY OF COOKERY. Food adulterations. Invalid cookery. Chafing-dish course. *Both semesters, 1 Lec. 1 Lab. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

4*a*. SANITATION. Food tests. *1 Lec. 1 Lab. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

5*a*. LECTURE COURSE. The scientific housekeeper; domestic architecture, convenience, economy, beauty, and sanitary conditions discussed; food — purity, economy, nutritive value, age; dietetic standards considered. *Both semesters. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

6*a*. CAMP COOKING. Open to men students. *1 Lec. 1 Lab. Hours to be arranged. Two credits.* 1 Stewart Hall. Professor Bardenwerper.

One credit only is given each semester for work in the Department of Home Economics and no more than four credits will be accepted toward a degree. Fee for cooking is $1 per semester; for sewing, $1 per semester.

XXVI. GEOLOGY

ASSISTANT PROFESSOR JONES

Junior and Senior College Courses

21. GENERAL GEOLOGY. The first semester's work deals chiefly with the dynamic and structural aspects of the subject, being a general discussion of geological forces and their results. During the second semester an outline is given of the history of the earth, including diastrophic changes, stratigraphic relationships, and the description of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *First semester, 10–11, M. W. F. Three credits. Second semester, 10–11, M. F. Two credits.* Mackay Mining Building. Assistant Professor Jones.

26. PHYSICAL GEOGRAPHY. Advanced course. *Prerequisite:* Elementary Physics and Chemistry. *Both semesters. Hours to be arranged. Four credits.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisites:.* Geology 21, Mineralogy 1a, 1b, and 3. *Second semester, 1–2, T. Th. Two credits.* Mackay Mining Building. Assistant Professor Jones.

23*a*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30 T. One credit.* Mackay Mining Building. Assistant Professor Jones.

23*b*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen, and in thin section with the microscope. *Prerequisite:* Mineralogy 24 and 25, and Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30 T. One credit.* Mackay Mining Building. Assistant Professor Jones. Deposit, $5.

24*a*. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 21. *Second semester. One credit.* Assistant Professor Jones.

24*b*. FIELD GEOLOGY. Four weeks are spent during the

summer vacation in the mapping and study of some selected field, preferably some mining camp where both the surface and the underground geology may be investigated. A concise report of the work, together with well-kept field notes, a finished geological map and cross sections, is required of each member of the class. *Prerequisite:* Geology 21, 22, and 24a. *Three credits.* Assistant Professor Jones.

24*c*. FIELD GEOLOGY. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspect of the work will be given. *Prerequisite:* Geology 24b. *First semester. Hours to be arranged.* Mackay Mining Building. Assistant Professor Jones.

25*a*. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, nonmetallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisite:* Geology 21, 22, and either 23a or 23b. *First semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Assistant Professor Jones.

25*b*. ECONOMIC GEOLOGY. A course on the general features of ore deposits, with discussion of some of the more important literature on the subject, and accompanied by the examination of abundant illustrative material. *Prerequisite:* Geology 25a. *Second semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Assistant Professor Jones.

27. PALEONTOLOGY. A brief laboratory course in elementary paleontology. *Second semester. Hours to be arranged. One credit.* Mackay Mining Building. Assistant Professor Jones.

40. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

60. GRADUATE COURSE. The original investigation of geologic problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged.* Mackay Mining Building. Assistant Professor Jones.

XXVII. MINERALOGY

ASSISTANT PROFESSOR JONES

Junior College Courses

1*a*. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

1*b*. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisite:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–4:30, W. Two credits.* Mackay Mining Building. Assistant Professor Jones.

24. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisite:* Mineralogy 1a and 1b, or 22; Physics 2 and 3. *First semester, 1–2, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

25. OPTICAL PROPERTIES OF MINERALS. Laboratory. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. Mineralogy 24 should be taken concurrently. *First semester, 1–4, F. One credit.* Mackay Mining Building. Assistant Professor Jones. Deposit, $5.

60. GRADUATE COURSE. To students suitably prepared, opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be*

arranged. Mackay Mining Building. Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, PROFESSOR JACOBSON, MR. WILLIAMS

Junior College Courses

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Designed for students who have not presented matriculation chemistry. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Mr. Williams.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. Four credits.* 101 Chemistry Building. Professor Adams and Mr. Williams. Fee, $2.50 per semester; deposit, $5.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. Special students may elect to take this course without registering for Chemistry 3, but no credit toward graduation will be allowed for this work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Williams. Fee, $2.50 per semester; deposit, $5.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in gravimetric analysis. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 3 and 4. *First semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

6. QUANTITATIVE ANALYSIS. Attention will be given primarily to volumetric analysis, but special determinations in Analytical Chemistry will be assigned to meet the demands of the individual students and the department in which the degree is sought. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F.,*

9–11:30, S. Three credits. 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

27. ORGANIC CHEMISTRY. Lectures on the carbon compounds. *Prerequisite:* Chemistry 3 and 4. (Given in alternate years with Chemistry 46 and 47.) *Both semesters, 10–11, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

28. ORGANIC CHEMISTRY. A laboratory course given in connection with Chemistry 27. *Both semesters, 2–4:30, M. T. Four credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

40. THESIS WORK FOR UNDERGRADUATES. Laboratory and library work on special topics to be chosen by the student in consultation with the instructors. *Prerequisite:* Chemistry 6, 27, and 28. *Second semester. Hours and credits to be arranged.* Chemistry Building. Professors Adams and Jacobson. Fee, $2.50 per semester; deposit, $5.

Graduate Courses

44. PHYSICAL CHEMISTRY. A lecture course correlating facts and theories concerning chemical reactions, solutions, vapor tension, osmotic pressure, viscosity, polarimetry, electrical conductivity, thermo-chemistry, chemical dynamics, equilibrium, and related phenomena. *Prerequisite:* Chemistry 27 and 28, and Physics 3. *Both semesters. Hours to be arranged. Four credits.* 206 Chemistry Building. Professor Jacobson.

45. PHYSICAL CHEMISTRY. A laboratory course to accompany Chemistry 44. *Second semester. Hours to be arranged. Two credits.* 207 Chemistry Building. Professor Jacobson. Fee, $2.50 per semester; deposit, $5.

46. HISTORY OF CHEMISTRY. A lecture course on the history and development of the science of Chemistry. (Given in alternate years with Chemistry 27.) *First semester, 9–10, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

47. ADVANCED ORGANIC CHEMISTRY. A lecture course on special chapters in organic chemistry. (Given in alternate years with Chemistry 27.) *Prerequisite:* Chemistry 27, 28, and German 2. *Second semester, 10–11, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

60. THESIS COURSE FOR GRADUATE STUDENTS. Special

problems for research, chosen in consultation with some member of the department, and carried on under his direction. No student will be admitted to this course who has not completed three years' work in Chemistry. *Hours and credits to be arranged.* Chemistry Building. Professors Adams and Jacobson. Fee, $2.50 per semester; deposit, $5.

XXIX. PHYSICS

PROFESSOR HARTMAN

Junior College Courses

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition, but with a deficiency on this subject. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely quantitative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurement. *Prerequisite:* Plane Geometry. A knowledge of Trigonometry also is desirable. *Both semesters. Lectures 10–11, daily; Laboratory, 2–4:30, F. Eight credits.* 5, 6, and 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisite:* Mathematics 1 and 7; High-school Physics or Physics 1. *Both semesters, 9–10, daily. Ten credits,* 11 Physics Building. Professor Hartman.

3. PHYSICAL MEASUREMENTS. Experimental work of distinctly quantitative character is done in heat and mechanics, sound and light, and electricity and magnetism. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisite:* Mathematics 1 and 7; Physics 1. *Both semesters, 2–4:30, W. Th. Four credits.* 5 and 6 Physics Building. Professor Hartman. Fee, $2 per semester; deposit, $5.

Senior College Courses

21. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance,

and self-inductance. Hysteresis. Photometry. One hour each week will be devoted to discussion and recitation. *Prerequisite:* Physics 1, 2, and 3. *First semester, 2–4:30, T. W. One or two credits.* 5 and 6 Physics Building. Professor Hartman. Fee, $2 per semester; deposit, $5.

22. HEAT AND THERMODYNAMICS. Lectures and recitations accompanied by experimental work of a quantitative character. This course, together with Physics 23, is introductory to Mathematical Physics. Many of the more difficult subjects that were merely touched upon in Physics 1 will be fully treated. *Prerequisite:* Physics 1, 2, 3, and Mathematics 7, 8, 9. *Both semesters, 8–9, T. Th. Four credits.* 11 Physics Building. Professor Hartman. (Not given in 1913–14.)

23. LIGHT AND PHYSICAL OPTICS. Lectures with experimental illustration on selected topics in light, including discussion of wave theory, diffraction, interference, resolving power of optical instruments, dispersion and absorption, spectrum analysis, double refraction and polarization. *Prerequisite:* Physics 2, 3; Mathematics 7, 8, and 9. *Both semesters, 8–9, T. Th. Four credits.* 11 Physics Building. Professor Hartman.

24. PHYSICAL OPTICS. Laboratory exercises in connection with Course 23. *First semester, 2–4:30, M. W. Two credits.* 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

25. HISTORY OF PHYSICS. Lectures and recitations. Preparation of reports and discussion of assigned topics by members of the class. *Prerequisite:* Physics 1, 2, 3. *Both semesters, 10–11, Th. One credit.* 11 Physics Building. Professor Hartman.

26. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisite:* Physics 2. *First semester, 8–9, T. Th. Two credits.* 11 Physics Building. Professor Hartman.

27. ELECTRIC LIGHTING. The application of physical principles to the various problems of electric lighting, photometry and miscellaneous applications of electricity. *Prerequisite:* Physics 1, 2, and 3, and Mathematics 7, 8, and 9. *First semester, 10–11, T. Th. Two credits.* 11 Physics Building. Professor Hartman.

28. MATHEMATICAL PHYSICS. An introduction for the more advanced mathematical analysis as applied to general

physical problems. *Prerequisite:* Physics 1, 2, 3, 21, and 22, and Mathematics 7, 8, and 9, *Differential Equations. Both semesters, 2–3, Th. Two credits.* 11 Physics Building. Professor Hartman.

40. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

XXXI. MATHEMATICS

PROFESSOR HASEMAN, MR. WALKER

Junior College Courses

1. ALGEBRA. A review of elementary algebra, quadratic equations, exponents and radicals, binominal theorem, mathematical induction, logarithms, progressions, determinants, theory of equations. *First semester, 1–2. Three credits.* 107 Morrill Hall. Professor Haseman.

2. SOLID GEOMETRY. The goemetry of the plane, the cone, the prism, the pyramid, the sphere. *Second semester, six weeks, 1–2. One credit.* 107 Morrill Hall. Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, twelve weeks, 1–2. Two credits.* 107 Morrill Hall. Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy with a study of the solar system, the stars, comets, etc. *First semester, 9–10. Three credits.* 107 Morrill Hall. Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to certain problems of practical astronomy. The theory and the use of the transit instrument. The determination of time, latitude and longitude. *Second semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review of algebra and trigonometry; advanced algebra to suit the needs of the students; geometry of the point, straight line, transformation of coordinates, conic sections, and the general equation of the second degree. Some time will be spent

on the analytic geometry of three dimensions. *Both semesters, 9–10. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminant forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester, 10–11. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTREGAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester, 9–10. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

25. HISTORY OF MATHEMATICS. Lectures and assigned readings on the history of the mathematical science. *First semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

For students who desire to pursue Mathematics as a major subject, the following more advanced courses may be arranged: Theory of Equations; Advanced Calculus; Differential Equations; Theory of Numbers; Theory of the Functions of a Complex, Variable, etc.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

Junior College Courses

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomore.*[1] *Two months' course during winter, 11–12, F. One-half credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volun-

teers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months course during winter, 11–12, F. One-half credit.* Captain Applewhite.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS SAMETH

NOTE—The course in Physical Education is offered to all young women in the University and is required in the Freshman and Sophomore years as part of the regular work. Upon entering the class students are carefully examined by a physician with particular attention to the lungs and heart action. Upon recommendation of this physician, this work may be postponed to the Junior and Senior years. At the beginning of the year, physical measurements of all members of the physical education classes are taken. The aim is to develop a strong symmetrical physique, with an easy and graceful poise of the body. Systematic exercise in the gymnasium and out of doors makes it possible to obtain these results.

Women taking this course will be required to provide themselves with regulation suits and black gymnasium shoes. The suits will cost about seven dollars each. A deposit of fifty cents is required for locker keys. This will be refunded at the close of the year to those who return their keys.

1. CALISTHENICS. Free work, light apparatus, games; folk, national and esthetic dancing. *Both semesters. Hours and credits to be arranged.* Gymnasium. Miss Sameth.

2. CALISTHENICS. Free work including Swedish marching, apparatus, folk, national and esthetic dancing. *Both semesters. Hours and credits to be arranged.* Gymnasium. Miss Sameth.

3. ADVANCED WORK. (Elective for Juniors and Seniors.) Games, more difficult dancing; one recitation a week on assigned readings in physical education. *Hours and credits to be arranged.* Gymnasium. Miss Sameth.

4. MATERIAL COURSE. This class will meet once a week at hours to be arranged. An attendance of not less than twelve will be required for its continuance. The object is to give those who are going out to teach simple games, folk-dances and setting-up drills suitable for use in the grades. In connection with this course, students will be required to teach a class of children for half an hour each week. Those who take this work will be required to take one additional physical education period in order to make up gymnasium credit, if they need it. *Both semesters. Hours and credits to be arranged.* Miss Sameth.

5. ATHLETICS. Two or four hours per week of athletics

[1]For exceptions, see Organization of Battalion of Cadets, page 67.

(skating, basket-ball, baseball, tennis, hockey, etc.) may be substituted for one or two hours of formal work or games.

6. CORRECTIVE GYMNASTICS. Students who, upon examination show a need of this work (especially those showing postural curvature of the spine, or weak arches), will be advised to take corrective gymnastics as often as possible. It may be substituted for other work in the same way as atheletics.

All classes meet three times a week. Once every other week a walk will be substituted for games in the gymnasium.

COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE

2. SCHOOL OF HOME ECONOMICS[1]

[1] The School of Home Economics is as yet only partially organized.

COLLEGE OF AGRICULTURE

FACULTY

JOSEPH EDWARD STUBBS[1].....President
ROBERT LEWERS.....Vice- and Acting President
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY.....Professor of Botany, Horticulture and Forestry
SAMUEL BRADFORD DOTEN.....Professor of Entomology
GORDON HAINES TRUE[2]..Professor of Agriculture and Animal Husbandry
MAXWELL ADAMS.....Professor of Chemistry
WINFRED BERDELL MACK.....Professor of Bacteriology and Veterinary Science
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
STERLING PRICE FERGUSSON....Professor of Meteorology and Climatology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
ERNEST ALBERT HOWES[2].....Professor of Agronomy
KATE BARDENWERPER.....Assistant Professor of Home Economics
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
AMOS ARTHUR HELLER[3].....Assistant Professor of Botany, Horticulture and Forestry
GEORGE DELAFIELD POWERS.....Instructor in Mechanical Engineering
ALBERT W. PRESTON.....Instructor in Mechanical Engineering
FRANK LEROY PETERSON....Instructor in Irrigation and Farm Mechanics
LESLIE THEODORE SHARP[4].....Instructor in Agronomy
VERNER E. SCOTT.....Instructor in Dairy Husbandry
ELSIE SAMETH.....Instructor in Physical Education for Women
H. M. ELLIS.....Instructor in English
MILES BRYCE KENNEDY.....Assistant in Chemistry
EDWIN EUGENE WILLIAMS.....Assistant in Chemistry
MARGARET MACK.....Assistant in Biology
THOMAS P. WALKER.....Student Assistant in Mathematics

AIM

The aim of the College of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operation of farming, gardening and stock raising, but also to give such train-

[1]Absent on leave, 1912–13. [2]Resigned, June, 1913.
[3]On leave, 1913–14. [4]Resigned, July 15, 1913.

ing in English, mathematics and the sciences, as will furnish a well-rounded education.

EQUIPMENT

FARM—The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, affords a first-hand acquaintance with the problems and methods of practical agriculture and horticulture.

LIVE STOCK—The college herds kept upon the adjacent State Fair grounds contain high-class representation of Percheron horses, the leading dairy and beef breeds of cattle, the middle and fine wool breeds of sheep, and the leading breeds of hogs. In this department the college is particularly strong, few, if any, of the western colleges having a better equipment of farm animals.

DAIRY—The new two-story dairy building, equipped with the most up-to-date machinery and apparatus, will furnish the best opportunity for instruction in methods of handling milk and dairy products, as milk testing, butter making, cheese manufacture, and the marketing of milk. The dairy herd of the Agricultural College gives opportunity for the study of dairy stock and milk production.

SHOPS—The shops for the teaching of wood-work and blacksmithing are equipped for the best of work. Arrangements have been made for the housing and use of the representative types of farm machinery used in the various field operations.

SHORT COURSES

A short winter course in dairying will be given during the year, definite announcement of which will be made later. This course will include lectures on milk and its products, the dairy breeds of cattle, their care and feeding, as well as practical work in the manufacture of butter, cheese, and ice cream, and the sanitary handling of milk for the city trade.

A Farmers' Short Course was given at the University from February 18 to 28, 1913. This was the first Farmers' Short Course ever given in the State, and it is hoped may become an established feature.

EXTENSION WORK

As in the past, the members of the Agricultural College and Experiment Station Staff are available for talks to farm-

ers on subjects connected with their work, and communities are urged to invite the services of the Station men when they are desired.

PRACTICUMS

During the Freshman and Sophomore years of the four-year course, one period a week will be given to forms of practical work in agriculture, horticulture, and animal husbandry not included in the laboratory courses. It is not intended that a student shall graduate who does not know how the common farm operations should be done, and it is intended that these practicum courses shall furnish the student an opportunity to learn to do those things which he failed to get in his farm experience or town life. The practicums will be chosen from week to week with reference to the needs of the individual student, and when possible will be supplementary to the courses being taken in class-room and laboratory.

CONDITIONS OF ADMISSION

SCHOOL OF AGRICULTURE

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from the accredited school or not. The examination will be held in September of each year.

3. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1
7.	German (a)	1
	German (b)	1
8.	French (a)	1
	French (b)	1
9.	Spanish (a)	1
	Spanish (b)	1
10.	Chemistry	1
11.	Physical Geography	½ or 1
12.	Botany	½ or 1
13.	Zoology	½ or 1
14.	Physiology	1
15.	Bookkeeping	½
16.	Shopwork	1
17.	Drawing	1
18.	Agriculture	½ or 1
19.	Manual Training	½

For entrance to the College of Agriculture, the candidates must present two years' English, Mathematics a and b; Language, other than English, 2 units[1], American History and Civics, 1 unit; Science, 2 units; 8 other units[2], to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual

[1] This requirement will go into effect August 1, 1914.
[2] August 1, 1914, these units will be reduced to 6.

entrance examinations under the recommendation of the professor under whom the special studies are to be taken, but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must be at least twenty years of age. For adequate reasons exceptions to this rule may be made by the Faculty and Regents.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of the College of Agriculture and have secured credit for the first two years' work required in the same. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

The Degree of Bachelor of Science in Agriculture is conferred upon students, who in addition to meeting the requirements in Military Science, have satisfactorily completed the full course of study, aggregating 144 semester-units[1], in the School of Agriculture as follows:

SCHOOL OF AGRICULTURE

COURSE OF STUDY

FRESHMAN

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
English 1	..	3	English 1	..	3
Mathematics 1	..	3	Mathematics 2, 3	..	3
Zoology 1	2	2	Botany 1	2	2
Agronomy 1	1	4	Animal Husbandry 1	1	4
Mechanic Arts 1	1	..	Mechanic Arts 2	1	..
Mineralogy 1c	..	1	Elementary Geology 1c	..	2
Practicums	1	..			
Total		18	Total		18

SOPHOMORE

First Semester			*Second Semester*		
English 2 or 4	..	3	English 2 or 4	..	3
Chemistry 1, 2 or 3, 4	2	2	Chemistry 1, 2 or 3, 4	2	2
Animal Husbandry 4	3	2	Agronomy 6	1	3
Agronomy 4	..	3	Horticulture 1	1	3
Elective	..	3	Elective	..	3
Total		18	Total		18

[1] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

First Semester			JUNIOR	*Second Semester*		
Agronomy 23	..	4		Animal Husbandry 22, 23	..	4
Chemistry 27 and 30, or 29 and 30	2	2		Chemistry 27 and 30, or 29 and 30	2	2
Civil Engineering 21	2	2		Civil Engineering 35	2	2
Agronomy 25	..	3		Zoology 10	1	2
Elective	..	3		Elective	..	3
Total		18		Total		18

First Semester			SENIOR	*Second Semester*		
Agronomy 27	3	2		Veterinary Science 21	3	2
Botany 26	1	2		Agronomy 28	..	5
Thesis	..	2		Thesis	..	2
Elective	..	8		Elective	..	6
Total		18		Total		18

ELECTIVES

No subject required in the Agricultural Course may be taken as an elective during Freshman or Sophomore years.

SCHOOL OF HOME ECONOMICS

The courses in Home Economics have thus far necessarily been restricted to practical laboratory work. In the past year, however, there have been added to the Library many books along the lines of sanitation, dietetics, hygiene, and food chemistry, thus enabling the student to do independent library work. The library will be still further increased, and related courses in Chemistry and Hygiene will be added.

From the beginning the young women of our State have shown strong interest in the various phases of this work. The department aims to raise the ideals of home-making and home-keeping, and to improve the general well-being of the student.

COURSES OF INSTRUCTION

VI. English
XV. Zoology
XVI. Hygiene
XVII. Botany
XVIII. Horticulture
XIX. Forestry
XX. Agronomy
XXI. Animal Husbandry
XXII. Veterinary Science
XXIII. Dairying
XXIV. Entomology
XXV. Home Economics
XXVI. Geology
XXVII. Mineralogy
XXVIII. Chemistry
XXX. Meteorology and Climatology
XXXI. Mathematics
XXXV. Mechanic Arts
XXXVI. Civil Engineering
XXXVIII. Military Science and Tactics
XL. Physical Education for Women

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. ELLIS

Junior College Courses

0. COMPOSITION AND RHETORIC. A course designed for students who are not equipped for pursuing English 1. *No credits.* Mr. Ellis.

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 8–9, M. W. F. Section 2, 9–10, T. Th. S. Section 3, 10–11, M. W. F. Six credits.* 102 Stewart Hall. Mr. Ellis.

2. COMPOSITION AND RHETORIC. The work follows the lines of English 1, with particular reference to the needs of students in engineering and agriculture. *Both semesters, M. W. F., 8–9. Six credits.* Mr. Ellis.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, M. W. F. Six credits.* Mackay Mining Building. Professor Hill.

For dsecription of other courses in English, see College of Arts and Science.

XV. ZOOLOGY

PROFESSOR FRANDSEN, PROFESSOR DOTEN, MISS MACK

Junior and Senior College Courses

1. GENERAL ZOOLOGY. An introduction to the whole field of Zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. Laboratory, 2–4:30, M. W. Four credits.* 202 Hatch Hall. Professor Frandsen, Miss Mack. Fee, $1 per semester; deposit, $2.

10. ECONOMIC ZOOLOGY. Lectures dealing with the habits and life histories of the more important economic vertebrates, and other arthropods, worms and protozoa in their relation to agriculture. One laboratory period per week. *Second semester. Three credits.* Given in alternate years to Juniors and Seniors in Agriculture. 301 Hatch Hall and Field. Professor Frandsen, Professor Doten. Fee, $1 per semester; deposit, $2.

For description of other courses in Zoology, see College of Arts and Science.

XVI. HYGIENE

PROFESSOR FRANDSEN, MISS MACK

Junior College Courses

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th.* 301 Hatch Hall. *Laboratory, 2–4:30, F. Six credits.* Professor Frandsen. Fee, $2 per semester; deposit, $2.

For description of other courses in Hygiene, see College of Arts and Science.

XVII. BOTANY

PROFESSOR KENNEDY, PROFESSOR FRANDSEN

Junior College Courses

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Illustrated by lantern slides and demonstrations. *Second semester. Lectures, 8–9, T. Th.* 301 Hatch Hall. *Laboratory, 2–4:30, M. W. Four credits.* Professor Frandsen. Fee, $1 per semester; deposit, $2.

2. CRYPTOGAMIC BOTANY. A general resume of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. Lectures illustrated by lantern slides, and Laboratory. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:30, T. Th. Four credits.* Hatch Hall. Professor Frandsen. Fee, $1 per semester; deposit, $2.

Senior College Courses

26. INDUSTRIAL BOTANY. The course is designed to give the student an intelligent knowledge of the sources and methods of production of the things of everyday life, such as coffee, cocoa, tea, rubber, cotton, rice, rope and paper-making, etc. Poisonous plants and weeds as affecting conditions in

Nevada. Important grasses and forage plants of the ranges. *First semester. Lectures and laboratory. Three credits.* 303 Stewart Hall. Professor Kennedy.

For description of other courses in Botany, see College of Arts and Science.

XVIII. HORTICULTURE

PROFESSOR KENNEDY

Junior College Courses

1. GENERAL HORTICULTURE. A general resume of all branches of horticulture, including floriculture, gardening, fruit-growing, the making of lawns, planting of ornamental trees and shrubs, and the beautifying of the home and farm grounds. *Lectures and practicums in Greenhouse and on College grounds. Second semester. Four credits.* 303 Stewart Hall. Professor Kennedy. *Bailey:* Manual of Gardening. Fee, $2 per semester.

XIX. FORESTRY

PROFESSOR KENNEDY

Junior College Courses

1. DENDROLOGY. The North American trees and their uses. *Both semesters. Hours to be arranged. Six credits.* 303 Stewart Hall. Professor Kennedy.

2. ELEMENTARY FORESTRY. The effects of deforestation on the water supply, forest protection and regeneration, care of forests, etc. *Prerequisite:* Botany 1, or Forestry 1. *First and second semesters. Hours to be arranged. Three credits.* 303 Stewart Hall. Professor Kennedy.

XX. AGRONOMY

PROFESSOR ————, MR. PETERSON, MR. ————

Junior College Courses

1. ELEMENTARY AGRICULTURE. Introduction to Agronomy and Animal Husbandry. The soil—its formation, texture, requirements, moisture and tillage; the plant—its relation to soil and climate, its propagation, growth, and cultivation, and a study of economic plants; the animal—history, feeding, and breeding. *First semester. Hours to be arranged. Five credits.* 201 Stewart Hall. Professor ————.

4. FARM CROPS I. Cereal crops. History, description, methods of culture, suitability, etc., of all the leading economic cereals. *Hunt:* Cereals in America. Laboratory—Study of matured plants in the field; seed grading; seed

testing for purity and vitality. *First semester. Hours to be arranged. Three credits.* 201 Stewart Hall. Professor ————.

Senior College Courses

6. FARM MECHANICS. A course of instruction in the machinery of the farm. Construction and use of modern field machinery for tillage, seeding and harvesting operations; general labor saving machinery adapted to the different operations of farm work; farm motors, animal treadmill, water, gasoline and electric engines; gasoline and steam tractors; farm pumps, wells, windmills, pressure water-systems. Usually a number of machines adapted for each of these purposes are available from a number of different manufacturers. Largely work in examining, setting up, testing and operating the field machines named. *Davidson and Chase:* Farm Machinery and Farm Motors. *Second semester. Lectures, M. W. F.; Lab. 2–4:30. Four credits.* Mr. Peterson.

23. FARM CROPS II. Forage crops, legumes, and grasses; special uses of these crops as hay, soiling, silage, pasture, green manure, cover crops, etc.; adaptation to soil and climatic conditions. Laboratory—Examination and grading of seeds of grasses and forage crops; seed grading; seed testing as to purity and vitality. *First semester. Hours to be arranged. Four credits.* 201 Stewart Hall. Professor——.

25. SOILS. A general lecture course developing the applications of Mineralogy, Geology, Physics, Chemistry, and Biology to soils, fertilizers, soil functions, and soil fertility, especially emphasizing the relation of soil conditions to crop production, the permanency of agricultural systems, and the practical uses of soils, and briefly reviewing the scientific literature on the subject. Assigned readings and papers will be required at least every three weeks throughout the term. *First semester. Hours to be arranged. Three credits.* Physics Building. Mr. ————.

27. FARM MANAGEMENT. The evolution of farming; the relation of capital and labor to farm management; the general management of implements and equipment; ownership versus rental of lands; the choice of a farm; systems of farming; farming compared with other lines of business; marketing problems; advertising; farm records and farm accounts; the management of fields, crops and manures. *First semester. Hours to be arranged. Five credits.* 101 Hatch Hall. Professor ————.

28. IRRIGATION. A brief review of the history of irrigation, the development of irrigation law, and the doctrine of appropriation. The principles of irrigation, the measurement of water on the farm, the duty of water. A study of the relation of rainfall, evaporation and seepage to irrigation. The methods of irrigation as practiced in different parts of the country are taken up. *Mead:* Irrigation Institutions. *Wilson:* Irrigation Engineering. *Second semester. Five credits.* Mr. Peterson.

29. SOIL FERTILITY. A laboratory course of three divisions proposing to study the soil in the laboratory and the field, correlating crop production with the physical, chemical, and biological make-up of soils. Each division to occupy one semester. The entire course requiring three semesters. Three credits to be given each semester when taken separately, but it is extremely advisable to take the course in its entirety. Bibliographical work will be required. This course is open to those of the Junior class who are qualified with gravimetric and volumetric chemistry and bacteriology. Mr. ————. Fee, $10.

NOTE—The portion of the course relative to Soil Physics will not be given in 1913–14.

XXI. ANIMAL HUSBANDRY

PROFESSOR ————

Junior College Courses

1. BREEDS OF LIVE STOCK. The origin, development, characteristics, and uses of pure breeds of farm animals. For illustration the animals of the University farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *Second semester. Hours to be arranged. Five credits.* 201 Hatch Hall. Professor————.

4. STOCK JUDGING. Practice in judging live stock, to gain familiarity with the points of excellence in the various breeds of farm animals. *Craig:* Judging Live Stock. *First semester. Hours to be arranged. Five credits.* Professor ————.

Senior College Courses

22. ANIMAL BREEDING. A discussion of the principles underlying the art of breeding, the aim of which is to develop, maintain and improve the various breeds and types of farm animals and farm crops, studied with special refer-

ence to their application to breeding of farm animals. *Second semester. Hours to be arranged. Two credits.* 101 Hatch Hall. Professor ————.

23. FEEDING ANIMALS. The principles underlying, and problems connected with, the feeding of farm animals. *Smith:* Profitable Stock Feeding. *Second semester. Hours to be arranged. Two credits.* 101 Hatch Hall. Professor ————.

25. LIVESTOCK REGISTRATION. The details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them; a study of pedigrees and how to keep herd records. *Second semester. Hours to be arranged. One credit.* 101 Hatch Hall. Professor ————.

26. ADVANCED STOCK FEEDING. Lectures and laboratory, laboratory to consist of conducting actual feeding experiments with farm animals. *Second semester. Three credits.* Station Farm. Professor ————.

27. ADVANCED STOCK JUDGING. The judging of animals in classes, as at fairs and stock shows. Laboratory twice a week. *Prerequisite:* Animal Husbandry 1 and 4. *Hours and credits to be arranged.* Professor ————.

XXII. VETERINARY SCIENCE

PROFESSOR MACK

Senior College Courses

21. VETERINARY SCIENCE. The more common ailments of domesticated animals, the infectious diseases, the maintenance of sanitary conditions, the methods of combatting infection. This course given in alternate years for Juniors and Seniors. *Prerequisites:* Zoology 1 and Botany 1. *Second semester. Hours to be arranged. Five credits.* 204 Hatch Hall. Professor Mack.

DAIRY HUSBANDRY

MR. SCOTT

Junior and Senior College Courses

This department offers instruction in the theory and practice of manufacturing and testing dairy products, the use of dairy machinery, and the proper means of handling milk.

1. TESTING DAIRY PRODUCTS. Methods of determining fat, acidity, moisture, etc., of dairy products, detection of adul-

teration in milk and butter, efficiency of cream separators. Primarily for Sophomores. Laboratory work and lectures. *Second semester. Three credits.* Dairy Building. Mr. Scott. Fee, $1; deposit, $1.

21. CHEESE MAKING. Practical work in making, curing, and judging cheddar and foreign cheese. Primarily for Juniors. Laboratory work—Assigned reading, and conference. *First semester. Three credits.* Dairy Building. Mr. Scott. Fee, $1; deposit, $1.

23. BUTTER AND ICE CREAM. Practical work in manufacturing butter and ice cream. A study of the factors influencing yield and quality of butter. Practical work with creamery machinery. Primarily for Juniors. *First semester. Three credits.* Dairy Building. Mr. Scott. Fee, $1; deposit, $1.

NOTE—Students electing courses 21 or 23 will be required to purchase two white suits and keep them laundered. The cost of the suits will be approximately $2 each.

XXIV. ENTOMOLOGY

PROFESSOR DOTEN

(See Zoology 10)

XXV. HOME ECONOMICS

ASSISTANT PROFESSOR BARDENWERPER

1*b*. TEXTILES. The history and the hygiene of dress. Studies in color and design in relation to dress. Lectures on choice of design, color, and material in home decoration. Practice work in cutting, fitting, and designing. *Both semesters. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

2*b*. FOOD VALUES. Household economics. Practice work in cookery. Preparation of menus in accordance with dietetic and economic standards. *Both semesters. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

3*b*. HISTORY OF COOKERY. Adulterations of foods. Dietetic errors. Invalid cookery. Chafing-dish course. *Both semesters. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

4*b*. DIET IN HEALTH AND DISEASE. *Both semesters. Hours*

to be arranged. Two credits. 1 Stewart Hall. Assistant Professor Bardenwerper.

5*b*. LECTURE COURSE. The scientific housekeeper; domestic architecture, convenience, economy, beauty, and sanitary conditions discussed; food—purity, economy, nutritive value, age; dietetic standards considered. *Two credits. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

6*b*. CAMP COOKING. Open to men students. *1 Lec., 1 Lab. Hours to be arranged. Two credits.* 1 Stewart Hall. Assistant Professor Bardenwerper.

Fee for cooking, $1 per semester; sewing, $1 per semester.

XXVI. GEOLOGY

ASSISTANT PROFESSOR JONES

Junior College Courses

1*c*. ELEMENTARY GEOLOGY. A brief elementary course in Geology. *Second semester, 10–11, T. Th. Two credits.* Mackay Mining Building. Assistant Professor Jones.

For description of other courses in Geology, see College of Engineering and College of Arts and Science.

XXVII. MINERALOGY

ASSISTANT PROFESSOR JONES

Junior College Courses

1*c*. ELEMENTARY MINERALOGY AND PETROLOGY. A brief course in the determination of the common minerals and rocks. *First semester, 2–4:30, M. One credit.* Mackay Mining Building. Assistant Professor Jones.

For description of other courses in Mineralogy, see College of Engineering and College of Arts and Science.

XXVIII. CHEMISTRY

PROFESSORS ADAMS AND JACOBSON, MR. KENNEDY, MR. WILLIAMS

Junior College Courses

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of Chemistry. Designed for students who have not presented matriculation chemistry. *Both semesters. Four credits.* 206 Chemistry Building. Mr. Williams.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T.*

semesters, 9–10. Six credits. 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminant forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester, 10–11. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration of areas, of curves, areas of surfaces, volumes, moments of inertia, and centers of gravity. *Second semester, 10–11. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

25. HISTORY OF MATHEMATICS. Lectures and assigned readings on the history of the mathematical science. *First semester. Hours to be arranged. Two credits.* 107 Morrill Hall. Professor Haseman.

For students who desire to pursue Mathematics as a major subject, the following more advanced courses may be arranged: Theory of Equations; Advanced Calculus; Differential Equations; Theory of Numbers; Theory of the Functions of a Complex, Variable, etc.

XXXV. MECHANIC ARTS

MR. POWERS, MR. PRESTON

Junior College Courses

1. BENCH WORK AND WOOD TURNING. *First semester, 2–4:30, M. or W. One credit.* 201 Mechanical Building. Mr. Powers. Fee, $2 per semester.

2. FORGING AND BLACKSMITHING. *Second semester. Hours to be arranged. One credit.* 5 Mechanical Building. Mr. Preston. Fee, $2 per semester.

For description of other courses in Mechanic Arts, see College of Engineering.

XXXVI. CIVIL ENGINEERING

PROFESSOR BOARDMAN, MR. ————

Senior College Courses

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. In class-

room, field, and drafting room, instruction is given in plane and topographic surveying, computation and mapping. *Prerequisite:* Plane Trigonometry. *First semester. Recitations or lectures, 1–2; field or drafting, 2–4:30, T. Th. Four credits.* Electrical Building. Professor Boardman. Deposit, $5.

35. RURAL ENGINEERING. Road building and maintenance; farm drainage; the construction of farm buildings and the use of concrete in farm construction. *Prerequisite:* C. E. 21. *Second semester. Recitations or lectures, 1–2; field or drafting, 2–4:30, W. F.* Electrical Building. Professor Boardman. Deposit, $5.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

Junior College Courses

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small-Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Two months' course during winter, 11–12, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months' course during winter, 11–12, F. One-half credit.* Captain Applewhite.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS SAMETH

NOTE—The course in Physical Education is offered to all young women in the University and is required in the Freshman and Sophomore years as part of the regular work. Upon entering the class, students are carefully examined by a physician, with particular attention to the lungs and heart action. Upon recommendation of this physician, this work may be postponed to the Junior and Senior years. At the beginning of the year, physical measurements of all members of the physical education classes are taken. The aim is to develop a strong,

[1]For exceptions, see Organization of Battalion of Cadets, page 67.

symmetrical physique, with an easy and graceful poise of the body. Systematic exercise in the gymnasium and out of doors makes it possible to obtain these results.

Women taking this course will be required to provide themselves with regulation suits and black gymnasium shoes. The suits will cost about $7. A deposit of 50 cents is required for locker keys. This will be refunded at the close of the year to those who return their keys.

1. CALISTHENICS. Free work, light apparatus, games; folk, national and esthetic dancing. *Both semesters. Hours and credits to be arranged.* Gymnasium. Miss Sameth.

2. CALISTHENICS. Free work including Swedish marching, apparatus, folk, national and esthetic dancing. *Both semesters. Hours and credits to be arranged.* Gymnasium. Miss Sameth.

3. ADVANCED WORK. (Elective for Juniors and Seniors.) Games, more difficult dancing; one recitation a week on assigned readings in physical education. *Hours and credits to be arranged.* Gymnasium. Miss Sameth.

4. MATERIAL COURSE. This class will meet once a week at hours to be arranged. An attendance of not less than twelve will be required for its continuance. The object is to give those who are going out to teach simple games, folk dances and setting-up drills suitable for use in the grades. In connection with this course, students will be required to teach a class of children for half an hour each week. Those who take this work will be required to take one additional physical education period in order to make up gymnasium credit, if they need it. *Both semesters. Hours and credits to be arranged.* Miss Sameth.

5. ATHLETICS. Two or four hours per week of athletics (skating, basket-ball, baseball, tennis, hockey, etc.), may be substituted for one or two hours of formal work or games.

6. CORRECTIVE GYMNASTICS. Students who, upon examination, show a need of this work (especially those showing postural curvature of the spine, or weak arches), will be advised to take corrective gymnastics as often as possible. It may be substituted for other work in the same way as athletics.

All classes meet three times a week. Once every other week a walk will be substituted for games in the gymnasium.

COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL AND ELECTRICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

COLLEGE OF ENGINEERING

FACULTY

JOSEPH EDWARD STUBBS[1].....President
ROBERT LEWERS.....Vice- and Acting President
GEORGE J. YOUNG[2].....Professor of Mining and Metallurgy
JAMES GRAVES SCRUGHAM.....Professor of Mechanical Engineering
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
LEON WILSON HARTMAN.....Professor of Physics
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
SANFORD CROSBY DINSMORE.....Assistant Professor of Chemistry
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GEORGE DELAFIELD POWERS.....Instructor in Mechanical Engineering
ALBERT W. PRESTON.....Instructor in Mechanical Engineering
WALTER S. PALMER.....Instructor in Mining and Metallurgy
EDWIN EUGENE WILLIAMS.....Instructor in Chemistry
H. M. ELLIS.....Instructor in English
THOS. P. WALKER.....Student Assistant in Mathematics

AIM

The aim of the College of Engineering it to equip young men with such knowledge of mining, mechanical, electrical, and civil engineering as is essential for entrance into these professions. The technical courses of study are arranged and directed with the purpose of preparing them for immediate usefulness. The instruction is given both by lectures and recitations, supplemented by work in the drafting room, field, laboratory and shop.

EQUIPMENT

For a general description of the equipment of the College of Engineering, see Mackay Mining Building, Mechanical

[1]On leave, 1912–13. [2]Resigned, July, 1913.

Building, Electrical Building, Chemistry Building, Laboratories for Geology and Mineralogy, Laboratories of the Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

CONDITIONS OF ADMISSION

1. Entrance to the Engineering Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work done here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition.

4. All new students of whatever rank, should meet the Committee on Admission and Advanced Standing.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

6. Greek (a)	1
Greek (b)	1
7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1
11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1
18. Agriculture	½ or 1
19. Manual Training	½

For entrance to the Engineering Schools, the candidates must present two years' English; Mathematics a, b, c, d, and e; Language, other than English, 2 units[1]; American History and Civics, 1 unit; Science, 2 units, one of which must represent advanced work; 6 other units[2], to be chosen as the candidate may desire.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination, on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons exceptions to this rule may be made by Faculty and Regents.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the department concerned.

[1] This requirement will go into effect August 1, 1914.
[2] August 1, 1914, these units will be reduced to 4.

THE JUNIOR CERTIFICATE

The Junior Certificate is granted to students who have satisfied the entrance requirements of the College of Engineering, and have secured credit for the first two years' work required in their respective schools. To all students receiving this certificate will be given the title of Associate.

REQUIREMENTS FOR A DEGREE

THE BACCALAUREATE DEGREE

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical or Electrical Engineering, upon students who have satisfactorily completed the full course of study in the School of Mechanical and Electrical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

In all the schools, however, the requirements in Military Science must be met.

DEGREES OF MINING, MECHANICAL, ELECTRICAL, AND CIVIL ENGINEER

The Degree of Mining Engineer, Mechanical Engineer, Electrical Engineer, or Civil Engineer is conferred only upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by

(*a*) Three years of experience in responsible engineering positions, or

(*b*) One year of graduate work in residence and two years of experience in responsible engineering positions.

The candidate must have attained the Bachelor's Degree in this or some other institution of recognized standing.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Courses and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

COURSES OF STUDY

FRESHMEN, ALL SCHOOLS

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
English 1	..	3	English 1	..	3
Chemistry 3 and 4	2	2	Chemistry 3 and 4	2	2
Mathematics 7	..	3	Mathematics 7	..	3
Drawing 1 and 2	3	..	Drawing 3	2	..
Mechanic Arts 1, 2 and 3	2	..	Mechanic Arts 2, 3 and 4	2	..
Elective	..	3	Elective	..	4
Total		18	Total		18

SCHOOL OF MINES

SOPHOMORE YEAR

First Semester			*Second Semester*		
Mineralogy 1a	2	..	Mineralogy 1b	2	..
Chemistry 5	3	..	Chemistry 6	3	..
Mathematics 8	..	5	Mathematics 9	..	3
Physics 2 and 3	2	5	Physics 2 and 3	2	5
Elective	..	1	Mineralogy 3	..	2
			Elective	..	1
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Mining 31a and 32	1	1	Mining 31b and 32	2	1
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Geology 21	..	2
Geology 21	..	3	Geology 22 and 23a or 23b	1	2
Mathematics 20	..	3	Field Geology 24a	1	..
Mathematics 21	..	2	Mathematics 20	..	3
Mining 27	..	2	Mining 27	..	2
Total		18	Total		18

Summer School of Geology (Geology 24b), 4 weeks.....3 credits

Summer School of Mine Surveying (Civil Eng. 32), 4 weeks.....3 credits

SENIOR YEAR

First Semester			*Second Semester*		
Mining 21	..	4	Mining 22	..	4
Mining 23a	2	..	Mining 23b	2	..
Mining 28	..	4	Mining 29	..	4
Mining 30	2	..	Mining 30	2	..
Mining 36	..	1	Mining 36	..	1
Geology 25a	..	3	Mining 40, Thesis	2	..
Civil Engineering 28	..	2	Elective	..	3
Total		18	Total		18

SCHOOL OF MECHANICAL AND ELECTRICAL ENGINEERING

SOPHOMORE YEAR

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
Mechanical Engineering 1	..	2	Electrical Engineering 1	..	2
Mechanic Arts 3	3	..	Mechanical Engineering 2	..	2
Physics 2 and 3	2	5	Mechanic Arts 3	2	..
Mathematics 8	..	5	Physics 2 and 3	2	5
Elective	..	1	Mathematics 9	..	3
			Drawing 4	2	..
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Electrical Engineering 21	..	3	Electrical Engineering 22	..	1
Mathematics 20	..	3	Mechanical Engineering 29	1	1
Mathematics 21	..	2	Mechanical Engineering 24	..	1
Drawing 25	2	..	Mathematics 20	..	3
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Drawing 26	3	..
Elective	..	2	Elective	..	4
Total		18	Total		18

SENIOR YEAR

First Semester			*Second Semester*		
Mechanical Engineering 25	..	4	Mechanical Engineering 27	..	2
Mechanical Engineering 26	..	2	Mechanical Engineering 28	1	1
Mechanical Engineering 30	1	1	Electrical Engineering 24	..	2
Electrical Engineering 23	..	3	Electrical Engineering 26	..	2
Civil Engineering 28	..	2	Drawing 27 or 28	2	..
Drawing 27	3	..	Mechanical Engineering 40,		
Elective	..	2	(Thesis)	..	2
			Elective	..	6
Total		18	Total		18

SCHOOL OF CIVIL ENGINEERING

SOPHOMORE YEAR

First Semester			*Second Semester*		
Mineralogy 1a	2	..	Physics 2 and 3	2	5
Physics 2 and 3	2	5	Mathematics 9	..	3
Mathematics 8	..	5	Electrical Engineering 1	..	2
Mechanical Engineering 1	..	2	Drawing 3a	1	..
Elective	..	2	Drawing 4	2	..
			Elective	..	3
Total		18	Total		18

JUNIOR YEAR

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Civil Engineering 26	..	3
Mathematics 20	..	3	Civil Engineering 27	1	2
Mathematics 21	..	2	Mathematics 20	..	3
Electrical Engineering 21 or Geology 21	..	3	Mathematics 21	..	2
Elective	..	4	Elective	..	3
Total		18	Total		18

Summer School of Mine Surveying (Civil Eng. 32), 4 weeks.....3 credits

SENIOR YEAR

First Semester			*Second Semester*		
Civil Engineering 23	..	4	Civil Engineering 24	4	1
Civil Engineering 25	2	3	Civil Engineering 30	..	2
Civil Engineering 28	..	2	Civil Engineering 31	..	2
Civil Engineering 33	1	2	Civil Engineering 33	2	1
Civil Engineering 36	..	1	Civil Engineering 36	..	1
Elective	..	3	Civil Engineering 40, Thesis	..	2
			Elective	..	3
Total		18	Total		18

COURSES OF INSTRUCTION

VI. English
XXVI. Geology
XXVII. Mineralogy
XXVIII. Chemistry
XXIX. Physics
XXXI. Mathematics
XXXII. Mining and Metallurgy
XXXIII. Mechanical Engineering
XXXIV. Electrical Engineering
XXXV. Mechanic Arts
XXXVI. Civil Engineering
XXXVII. Drawing
XXXVIII. Military Science and Tactics

VI. ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL, MR. ELLIS

0. COMPOSITION AND RHETORIC. A course designed for students who are not equipped to pursue English 1. *No credits.* Mr. Ellis.

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is developed from the study of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 8–9, M. W. F. Section 2, 9–10, T. Th. S. Section 3, 10–11, M. W. F. Six credits.* 101 Stewart Hall. Mr. Ellis.

2. COMPOSITION AND RHETORIC. The work follows the lines of English 1, with particular reference to the needs

of students in engineering and agriculture. *Both semesters, M. W. F., 8–9. Six credits.* Mr. Ellis.

XXVI. GEOLOGY

ASSISTANT PROFESSOR JONES

Senior College Courses

21. GENERAL GEOLOGY. The first semester's work deals chiefly with the dynamic and structural aspects of the subject, being a general discussion of geologic forces and their results. During the second semester an outline is given of the history of the earth, including diastrophic changes, stratigraphic relationships, and the description of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *First semester, 10–11, M. W. F. Three credits. Second semester, 10–11, M. F. Two credits.* Mackay Mining Building. Assistant Professor Jones.

22. ELEMENTARY PETROLOGY. Lectures on the classification, characters and origin of rocks. *Prerequisite:* Geology 21, Mineralogy 1a, 1b, and 3. *Second semester, 1–2, T. Th. Two credits.* Mackay Mining Building. Assistant Professor Jones.

23*a*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30, T. One credit.* Mackay Mining Building. Assistant Professor Jones.

23*b*. PETROGRAPHIC LABORATORY. The study of rocks in the hand specimen, and in thin section with the microscope. *Prerequisite:* Mineralogy 24 and 25, and Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30, T. One credit.* Mackay Mining Building. Assistant Professor Jones. Deposit, $5.

24*a*. FIELD GEOLOGY. Instruction in field methods, with actual practice in the investigation of selected areas. Five days of field work are given, a part of the time being devoted to the mapping of some area in the vicinity of the University. *Prerequisite:* Geology 21. *Second semester. One credit.* Assistant Professor Jones.

24*b*. FIELD GEOLOGY. Four weeks are spent during the summer vacation in the mapping and study of some selected field, preferably some mining camp where both the surface

and the underground geology may be investigated. A concise report of the work, together with well-kept field notes, a finished geological map and cross-sections, is required of each member of the class. *Prerequisite:* Geology 21, 22, and 24a. *Three credits.* Mackay Mining Building. Assistant Professor Jones.

24c. FIELD GEOLOGY. The office work required for the completion of the mapping may be done during the first semester following, when occasional lectures on the theoretical aspect of the work will be given. *Prerequisite:* Geology 24b. *First semester. Hours to be arranged. One credit.* Mackay Mining Building. Assistant Professor Jones.

25a. ECONOMIC GEOLOGY. A general course treating the modes of occurrence, origin, and distribution of the principal ores, nonmetallic minerals and rocks used in the arts and industries, with descriptions of typical examples from important mining regions. Lectures and recitations. *Prerequisite:* Geology 21, 22, and either 23a or 23b. *First semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Assistant Professor Jones.

25b. ECONOMIC GEOLOGY. A course on the general features of ore deposits, with discussion of some of the more important literature on the subject, and accompanied by the examination of abundant illustrative material. *Prerequisite:* Geology 25a. *Second semester, 1–2, M. W. F. Three credits.* Mackay Mining Building. Assistant Professor Jones.

27. PALEONTOLOGY. A brief laboratory course in elementary paleontology. *Second semester. Hours to be arranged. One credit.* Mackay Mining Building. Assistant Professor Jones.

40. UNDERGRADUATE THESIS COURSE. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

60. GRADUATE COURSE. The original investigation of geologic problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged.* Mackay Mining Building. Assistant Professor Jones.

For description of other courses in Geology, see College of Arts and Science.

XXVII. MINERALOGY

ASSISTANT PROFESSOR JONES

Junior College Courses

1*a*. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

1*b*. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisite:* Chemistry 3 and 4. *Second semester, 2–4:30, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones. Fee, $2.50 per semester.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1a. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Jones.

Senior College Courses

22. CRYSTALLOGRAPHY. Lectures, recitations, and laboratory practice on the morphology of minerals. *First semester. Lecture, 10–11, T. Laboratory, 2–4:30, W. Two credits.* Mackay Mining Building. Assistant Professor Jones.

24. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisite:* Mineralogy 1a and 1b, or 22; Physics 2 and 3. *First semester, 1–2, M. T. Two credits.* Mackay Mining Building. Assistant Professor Jones.

25. OPTICAL PROPERTIES OF MINERALS. Laboratory. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. Mineralogy 24 should be taken concurrently. *First semester, 1–4, F. One credit.* Mackay Mining Building. Assistant Professor Jones. Deposit, $5.

60. GRADUATE COURSE. To students suitably prepared opportunity is offered for advanced work and research in Mineralogy and Crystallography. *Hours and credits to be*

arranged. Mackay Mining Building. Assistant Professor Jones.

XXVIII. CHEMISTRY

PROFESSOR ADAMS, ASSISTANT PROFESSOR DINSMORE, MR. WILLIAMS

Junior College Courses

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Four credits.* 206 Chemistry Building. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. Special students may elect to take this course without registering for Chemistry 3, but no credit towards graduation will be allowed for this work. *Both semesters, 2–4:30, W. Th. Four credits.* 101 Chemistry Building. Mr. Williams. Fee, $2.50 per semester; deposit, $5.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in gravimetric analysis. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 3 and 4. *First semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

5*a*. ELEMENTARY FUEL ANALYSIS. Designed particularly for mechanical engineers. *First semester, 2–4:30, Th.* Chemistry Building. Professor Adams and Professor Dinsmore.

6. QUANTITATIVE ANALYSIS. Attention will be given primarily to volumetric analysis, but special determinations in Analytical Chemistry will be assigned to meet the demands of the individual students and the departments in which the degree is sought. One hour of the laboratory time each week will be used for lecture and class-room instruction. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F., 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams. Fee, $2.50 per semester; deposit, $5.

For description of other courses in Chemistry, see College of Arts and Science.

XXIX. PHYSICS

PROFESSOR HARTMAN

Junior College Courses

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition, but with a deficiency in this subject. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely qualititative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurements. *Prerequisite:* Plane Geometry. A knowledge of Trigonometry also is desirable. *Both semesters. Lectures 10–11, daily; Laboratory, 2–4:30, F. Eight credits.* 5, 6, and 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisite:* Mathematics 1 and 7; High-school Physics or Physics 1. *Both semesters, 9–10, daily. Ten credits.* 5, 6, and 11 Physics Building. Professor Hartman.

3. PHYSICAL MEASUREMENTS. Experimental work in heat and mechanics, sound and light, and electricity and magnetism of distinctly quantitative character is done. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisite:* Mathematics 1 and 7; Physics 1. *Both semesters, 2–4:30, W. Th. Four credits.* 5 and 6 Physics Building. Professor Hartman. Fee, $2 per semester; deposit, $5.

Senior College Courses

21. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. Photometry. One hour each week will be devoted to discussion and recitation. *Prerequisite:* Physics 1, 2, and 3. *First semester, 2–4:30, T. W. One or two credits.* 5 and 6 Physics Building. Professor Hartman and Mr. ————. Fee, $2 per semester; deposit, $5.

40. UNDERGRADUATE THESIS WORK, and all special labora-

tory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

For other courses in Physics, see College of Arts and Science.

XXXI. MATHEMATICS

PROFESSOR HASEMAN, MR. WALKER

Junior College Courses

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review of algebra and trigonometry; advanced parts of the algebra to suit the needs of the students; geometry of the point, straight line, transformation of coordinates, conic sections, and the general equation of the second degree. Some time will be spent on the analytic geometry of the three dimensions. *Both semesters, 9–10. Six credits.* 107 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application to expansion in series, tangents and normals, curvature, indeterminate forms, maxima and minima. Illustrative examples of a practical nature are emphasized. *First semester, 10–11. Five credits.* 107 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of plane curves, areas of surfaces, volumes, moments of inertia and centers of gravity. *Second semester, 10–11. Three credits.* 107 Morrill Hall. Professor Haseman.

Senior College Courses

20. ANALYTIC MECHANICS. Work in the resolution of forces, center of gravity, moment of inertia, laws of motion, friction, and dynamics of machinery. Emphasis is placed on practical numerical examples to illustrate the theory. *Both semesters, 8–9. Six credits.* 107 Morrill Hall. Professor Haseman.

21. MECHANICS OF MATERIAL. Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *Both semesters, 8–9. Four credits.* 107 Morrill Hall, Professor Haseman.

For description of other courses in Mathematics, see College of Arts and Science.

XXXII. MINING AND METALLURGY

PROFESSOR ————, MR. PALMER

Senior College Courses

21. MINING (General). Excavation, explosives, tunneling, boring, shaft-sinking. *First semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor ————.

22. MINING (General). Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, mine equipment and management. *Second semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor ————.

23*a*. MINING (Laboratory). Problems in engineering and in the design of mining and metallurgical machinery. *First semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor ————.

23*b*. MINING (Laboratory). Continuation of Mining 23*a*. *Second semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor ————.

24. MINING (Laboratory). Practice in sharpening and tempering hand and machine drills, in the use of these, and in forging and welding. *First semester (alternate years). Hours to be arranged. Two credits.* Mining Laboratory and Forge Shop. Professor ————.

25. EXCURSIONS. During the year two trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit. The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formation is also done in order to facilitate interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide, and reduction plants. Reports of observations, with sketches, are required of each student. (For Seniors, School of Mines.) Professor ————.

26. ENGINEERING CONTRACTS AND SPECIFICATIONS. *Second*

semester. Hours to be arranged. One credit. Lecture Lecture Room, Mackay Mining Building. Professor ————

27. METALLURGY (General). Lectures and recitations. Physical properties of the more important metals and alloys; physical properties of the structural metals and alloy steels; the metallographical study of steels. *Prerequisite:* Chemistry 1, 2, 3; Mineralogy 1. *Both semesters. Four credits.* Lecture Room, Mackay Mining Building. Professor ———— and Mr. Palmer.

28. METALLURGY (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *First semester, 10–11, M. T. Th. F. Four credits.* Lecture Room, Mackay Mining Building. Professor ————.

29. METALLURGY (Copper, Lead, Zinc). Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *Second semester, 10–11, M. T. Th. F. Four credits.* Lecture room, Mackay Mining Building. Professor ————.

30. METALLURGY (Laboratory). A series of experiments is given which is designed to supplement, in part, the class-room work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to supplement the small-scale experiments. *Prerequisite:* Metallurgy 27; Chemistry 5 and 6. *First semester, 2–4:30, W. Th. Second semester, 2–4:30, Th. F. Four credits.* Metallurgical Laboratory, Mackay Mining Building. Professor ————. Fee, $10 per semester.

31*a*. ASSAYING. Lectures and recitations. Methods of assaying, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying. *Prerequisite:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Mr. Palmer.

31*b*. ASSAYING. Lectures and recitations. Chemistry in assay slags and slag calculation. Full discussion of the assay of difficult ores and metallurgical products, the fire assay of lead, platinum, bismuth, tin, and mercury, the errors and losses in fire assay. *Second semester. Hours to be*

arranged. One credit. Lecture Room, Mackay Mining Building. Mr. Palmer.

32. ASSAYING (Laboratory). Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miner's pan, horn, and batea. *Prerequisite:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester. One credit. Second semester. Two credits. Hours to be arranged.* Assaying Laboratory, Mackay Mining Building. Mr. Palmer. Fee, $5 for first semester; for second semester, $7.50.

33. FIRST AID AND HYGIENE. Four lectures. Required of all Seniors, School of Mines. *Second semester. Hours to be arranged.* Professor Frandsen.

34. MINING LAW. Four lectures. *Second semester. Hours to be arranged.*

35. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work must cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations, and to put at least one whole vacation period into practical work.

36. MINING CONFERENCE. Discussion of laboratory and class-room work; technical literature, student papers and quizzes. *Both semesters. Hours to be arranged. Two credits.* Mackay Mining Building. Professor ————.

37. METALLURGICAL CALCULATIONS. A discussion of the principles of thermo-chemistry and a series of problems illustrating them. *Elective. Second semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Mr. Palmer.

38. The purchase, installation and operation of mining and metallurgical machinery. *Elective. Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor ———— and Mr. Palmer.

39. MILL AND SMELTER ANALYTICAL METHODS. *Elective: First semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Mr. Palmer.

40. THESIS. Each Senior student is required to present a thesis on some subject in mining or metallurgy or related

branch of Engineering. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor ————.

XXXIII. MECHANICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. POWERS, MR. PRESTON

Junior College Courses

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers. *First semester, 1–2, T. Th. Two credits.* Electrical Building. Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits.* Electrical Building. Mr. Powers.

Senior College Courses

23. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *First semester, 9–10, W. One credit.* Electrical Building. Mr. Powers.

24. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horsepowers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 10–11, W. One credit.* Professor Scrugham.

25. THERMODYNAMICS. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10, M. W. Th. F. Four credits.* 101 Mechanical Building. Mr. Powers.

26. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines

and gas producers. The composition of the hydrocarbon gases and oil is discussed, and comparative cost and efficiencies considered. *First semester, 8–9, M. W. Two credits.* Electrical Building. Mr. Powers.

27. POWER PLANTS. Mechanical Engineering of power plants is presented in a nonmathematical way, and the practical and experimental side of machinery appliances and economical auxiliaries employed are shown. *First semester, 10–11, T. Th. Two credits.* Electrical Building. Professor Scrugham.

28. VALVE GEARING. A study of the various forms of engine valves, link motions, radical gears, and shaft regulation. Each student must design some form of standard engine valve and governor, the data being taken from trade catalogues and engines actually in use. *Second semester, 1–2, 2–4:30, F. Two credits.* Electrical Building. Mr. Powers.

29. SHOP MANAGEMENT. The economic elements in shop processes are studied. Each student is assigned a group of shop students whose work he must plan and see that the proper tools are provided. All operations are dispatched according to previously made time schedules covering the requirements of the job. *Both semesters. (Elective.) 1–4:30, Days to be arranged. Two credits each semester.* Mechanical Building. Mr. Preston.

30. ENGINEERING LABORATORY PRACTICE. This course covers the various methods of conducting and working up tests, determining efficiencies, driving powers, etc., and is supplemented by practical tests on a number of pieces of apparatus. *Both semesters. 1–2, 2–4:30. Days to be arranged. Two credits each semester.* 101 Mechanical Building. Professor Scrugham, Mr. Powers, Mr. Preston.

40. THESIS COURSE. The designing of a machine or the original investigation of some subject congenial to the student's taste and included in the scope of curriculum. *Second semester. Hours to be arranged. Two credits.* 202 Mechanical Building. Professor Scrugham.

XXXIV. ELECTRICAL ENGINEERING

PROFESSOR SCRUGHAM, MR. POWERS

Junior College Courses

1. ELEMENTS OF ELECTRICAL ENGINEERING. Includes a discussion of the laws and properties of electric and magnetic

circuits, followed by an introduction to the study of direct and alternating-current machinery. *Second semester, 10–11, T. Th. Two credits.* Electrical Building. Professor Scrugham.

Senior College Courses

21. DIRECT-CURRENT MACHINERY. Fundamental principles, theory, characteristics, operation, and construction of dynamos, motors, storage batteries, etc., supplemented by laboratory work. *First semester, 10–11, M. W. F. Three credits.* 101 Mechanical Building. Professor Scrugham.

22. ALTERNATING-CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* Electrical Engineering 21. *Second semester, 10–11, M. W. F.* Electrical Building. Professor Scrugham.

23. APPLIED ELECTRICITY. Application of electricity to machine tools, pumps, cranes, telephony, etc. *First semester, 10–11, M. W. Two credits.* Electrical Building. Mr. Powers.

24. ELECTRIC RAILWAYS AND TRANSMISSION. Covers the construction, equipment, and operation of different types of electric roads, together with related problems of power transmission and generation. *Prerequisite:* Electrical Engineering 22. *Second semester, 9–10, M. W. Two credits.* Electrical Building. Professor Scrugham.

25. ELECTRICAL ENGINEERING LABORATORY. The use and care of electrical instruments. Test of generators, motors, etc. *Both semesters, 2–4:30, M. W. One to four credits.* Mr. Powers.

26. ELECTRICAL ENGINEERING LABORATORY. A continuation of the preceding course, but dealing particularly with more advanced problems in alternating-current engineering. *Both semesters, 2–4:30, M. W. One to four credits.* Electrical Building. Professor Scrugham, Mr. Powers.

27. ELECTRIC POWER PLANTS. A study of the principles involved in the generation, transmission, and transformation of electric current for commercial uses. This course is supplemented by visits to the various power plants in the vicinity of the University. *Second semester, 9–10, T. Th. Two credits.* Electrical Building. Professor Scrugham.

XXXV. MECHANIC ARTS

MR. POWERS, MR. PRESTON

Junior College Courses

1. WOOD WORK. The students are taught the use of hand and machine tools and the most approved processes and methods followed in engineering construction. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenter's tools. The wood turning involves the various principles of lathe work in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine timbering. *Both semesters, 2–4:30, M. W. Two credits each semester.* 201 Mechanical Building. Mr. Preston. Fee, $2 per semester.

2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case-hardening, and the making of a complete set of machine cutting tools for the student's future use in the machine shop. *Both semesters. Section 1, 2–4:30, T. Th.; Section 2, 8–12, S. Two credits each semester.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface chipping, squaring, and fitting, round filing, sawing, scraping, and polishing. Machine work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel and file; the laying out of work and the use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, T. Th. F.; 8–12, Sat. One to four credits each semester.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

4. FOUNDRY PRACTICE. Instruction is given in molding, core-making, and casting in brass and iron. Practically all of the castings used in the machine shop are made by the students in this course. *Both semesters, 8–12, Sat. Two credits each semester.* 101 Mechanical Building. Mr. Preston. Fee, $2 per semester.

XXVI. CIVIL ENGINEERING

PROFESSOR BOARDMAN, MR. ———

Senior College Courses

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting room, in land surveying, topography, hydrography, mining, and city surveying. *Both semesters. Recitations or lectures, 1–2; Field or drafting, 2–4:30, T. Th. Eight credits.* Electrical Building. Professor Boardman. Deposit, $5.

23. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester. Hours to be arranged. Four credits.* Electrical Building. Professor Boardman.

24. STRUCTURAL DESIGN. General features and detail of design, estimates of weight, and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester. Hours to be arranged. Drafting, four credits; lecture, one credit.* Electrical Building. Professor Boardman.

25. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester. Hours to be arranged. Field or drafting, 2–4:30, M. W. Five credits.* Electrical Building. Professor Boardman. Deposit, $5.

26. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester. Hours to be arranged. Three credits.* Electrical Building. Professor Boardman.

27. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure and esti-

mates its cost. *Second semester. Lecture, two credits; drafting, one credit.* Electrical Building. Professor Boardman.

27*a*. MASONRY CONSTRUCTION. Additional work, drafting or laboratory testing. *Hours to be arranged. One to three credits, depending upon the time put in and the work done.* Electrical Building. Professor Boardman.

28. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water, and the laws of its flow through openings and in channels of various kinds. *First semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

29. GRAPHIC STATICS. A study of the principles of graphic statics and their application in ascertaining the stresses in framed structures. *First semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman and Mr. ————.

29*a*. GRAPHIC STATICS. Additional work in graphics of bridge trusses. *One to three credits, depending upon work done.* Electrical Building. Professor Boardman.

30. WATER SUPPLY. A study of public water supplies and their sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

31. IRRIGATION ENGINEERING. A thorough study of the questions involved in the collection, storage, and distribution of water for irrigation purposes. *Second semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

32. MINE SURVEYING. At the close of the college year the Junior Class in Surveying takes a four weeks' trip to some mining district in Nevada. Both underground and surface surveying are carried on and maps are made from these surveys. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. *Four weeks. Three credits.* Professor Boardman.

33. REINFORCED CONCRETE. Its principles and applications. *First semester—Lecture, two credits; drafting, one credit. Second semester—Lecture, one credit; drafting, two credits.* Electrical Building. Professor Boardman.

34. WATER POWER ENGINEERING. A study of the more

important problems of water-power development including characteristics of hydraulic motors affecting design, selection and installation. *Hours to be arranged. Three credits.* Electrical Building. Professor Boardman.

35. RURAL ENGINEERING. Road building and maintenance; farm drainage; the construction of farm buildings and the use of concrete in farm construction. *Prerequisite:* C. E. 21. *Second semester. Recitations or lectures, 1–2, field or drafting, 2–4:30, W. F.* Electrical Building. Professor Boardman. Deposit, $5.

36. ENGINEERING LITERATURE. Presentation and discussion of topics selected from current engineering literature. *Hours to be arranged. One credit.* Professor Boardman.

40. THESIS. *Second semester. Two credits. Hours to be arranged.* Professor Boardman.

XXXVII. DRAWING

PROFESSOR SCRUGHAM, PROFESSOR BOARDMAN, ASSISTANT PROFESSOR LEWERS, MR. POWERS, MR. PRESTON

Junior College Courses

1. FREEHAND DRAWING. Perspective sketches of machines; lettering; sketches of projections of machines. *First semester, 10–11, daily. Two credits.* Physics Building. Assistant Professor Lewers.

2. MECHANICAL DRAWING. Plates, machine parts, etc. *First semester. Section 1, 9–10; Section 2, 10–11, daily. One credit.* Physics Building. Assistant Professor Lewers.

3. ELEMENTARY MACHINE DESIGN. Drawing and design of machine parts, modern shop arrangement, etc. *Second semester, 9–10 and 10–11, daily. Two or three credits.* Mr. Preston.

3*a*. TOPOGRAPHICAL DRAWING AND MAPPING. *Second semester. Hours to be arranged. One credit.* Electrical Building. Professor Boardman.

4. DESCRIPTIVE GEOMETRY. *Second semester, 8–9, daily. Two credits.* Mr. Powers.

Senior College Courses

25. MACHINE DESIGN. *First semester, 2–4:30, M. W. F. Three credits.* Electrical Building. Professor Scrugham.

26. STEAM BOILER DESIGN. *Second semester, 2–4:30, M.*

W. F. Three credits. Electrical Building. Professor Scrugham.

27. ADVANCED MACHINE DESIGN. *Both semesters, 2–4:30, M. W. F. One to three credits.* Electrical Building. Professor Scrugham.

28. ELECTRICAL DESIGN. *Second semester, 2–4:30, T. Th. F. One to three credits.* Electrical Building. Professor Scrugham.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

Junior College Courses

2. REGULATIONS. Recitations in infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Two months' course during winter, 11–12, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subject with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months' course during winter, 11–12, F. One-half credit.* 108 Morrill Hall. Captain Applewhite.

[1]For exceptions, see Organization of Battalion of Cadets, page 67.

COLLEGE OF EDUCATION

COLLEGE OF EDUCATION

FACULTY

JOSEPH EDWARD STUBBS[1].....President
ROBERT LEWERS.....Vice- and Acting President
JAMES EDWARD CHURCH, JR.....Professor of the Latin Language and Literature
LAURA DE LAGUNA.....Professor of the Romanic Languages and Literatures
JEANNE ELIZABETH WIER.....Professor of History and Political Science
PETER FRANDSEN.....Professor of Biology
PATRICK BEVERIDGE KENNEDY.....Professor of Botany, Horticulture and Forestry
ROMANZO ADAMS.....Professor of Economics and Sociology
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics
JOHN CALVIN WATSON.....Professor of the Greek Language and Literature
GEORGE ORDAHL.....Professor of Education and Psychology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
REUBEN CYRIL THOMPSON.....Associate Professor of Latin and Greek Languages and Literatures
KATE BARDENWERPER.....Assistant Professor Home Economics
KATHERINE LEWERS.....Assistant Professor of Drawing
J CLAUDE JONES.....Assistant Professor of Geology and Mineralogy
GRACE ALICE DAY.....Supervisor of Training
ELSIE SAMETH.....Instructor in Physical Education for Women
H. M. ELLIS.....Instructor in English
KATHERINE RIEGELHUTH.....Instructor in German
EDWIN EUGENE WILLIAMS.....Assistant in Chemistry
MARGARET MACK.....Assistant in Biology
THOMAS P. WALKER.....Student Assistant in Mathematics

ORGANIZATION

The general purpose of the College of Education is to organize and correlate the different forces of the University which may contribute to educational efficiency in the State of Nevada. This is done through the grouping of University courses, through the Training School, and through the Summer School.

[1]On leave, 1912–13.

THE TRAINING SCHOOL

The College of Education conducts its training school in connection with the Reno Public Schools, through the courtesy of the Board of Education and of City Superintendent of Schools B. D. Billinghurst. Each student participates in three distinct types of experience: (*a*) practice teaching in the various elementary school subjects throughout the year; (*b*) observation of the work of the regular grade teachers; (*c*) taking full charge of a room during the absence of the regular teacher for periods varying from a half day to a week or more. All of this work is carefully planned and supervised.

SUMMER SCHOOL FOR TEACHERS

June 24, 1912, the summer school for teachers opened with an attendance of eighty-seven. The session lasted six weeks and was under the immediate direction of Professor George Ordahl of the College of Education. The following courses were given:

Educational psychology, theory and practice of teaching, child study, drawing, geography, arithmetic, reading and language, history, industrial arts, and demonstration school work. The instructors were Professor George Ordahl and Miss Grace Day of the regular staff, and Miss Abby Day and Miss Sperry, special instructors. Hon. John E. Bray, State Superintendent of Public Instruction, was present during the entire session and contributed materially to the success of the work, and credit is also due the Deputy Superintendents for their earnest support.

This work is for the special benefit of the common schools, and the University is enabled to place at the service of the teachers of Nevada its laboratories and equipment at a time when regular work is not going on.

SUMMER SCHOOL ANNOUNCEMENTS FOR 1913

SESSION—MONDAY, JUNE 23, TO FRIDAY, AUGUST 1, 1913

REGISTRATION. The Registrar's office will be open for registration on Monday, June 23. All are requested to register promptly. All classes will start work on Tuesday, June 24.

ADMISSION. No entrance examinations are required. Courses are open to any person of good moral character and sufficient academic preparation to profit thereby. However, those wishing regular college credit must be graduates from an accredited high school or its equivalent.

FACULTY. Instruction in the Summer Session will be given

by the following-named persons: Miss Clara M. Hetchel, Head of the Department of Art and Manual Training, Chico Normal School; Miss Agnes Howe, Professor of History, San Jose Normal School, just returned from a year's study abroad and at the University of Wisconsin; Miss Lida Lennon, Head of the Department of Music, Chico Normal School; Dr. George Ordahl, Professor of Education, University of Nevada; Miss Rosalie Pollock, for several years Supervisor in the City Schools of Salt Lake City, now of Oklahoma City, Oklahoma.

CREDIT. Credit toward a University degree is in every case subject to the regular matriculation requirement of the University. One and one-half credits will be allowed for each course. No person may register and receive credit in more than four courses. One may, however, enroll as a visiting member in such courses as one sees fit.

EXPENSE. Dormitories will open Saturday, June 21; Dining Hall June 22. Board can be had at the University Dining Hall for $18 per month; room at the University Dormitories for $5 for six weeks. There will be a registration fee of $5, thus making the total expense of the six weeks' session $37. Students coming to the University Dormitories are expected to furnish their own towels, sheets, pillow cases, such covering as they will require, and one comfort of extra thickness, three feet by six feet, to put on mattress. Persons not wishing to bring above-mentioned articles may rent same for $3 for term.

LECTURES. A number of lectures will be given during the session by educators of the State and by persons from outside the State. The National Education Association meeting at Salt Lake City this July, has enabled us to secure speakers who will be passing through Reno and whom otherwise we should not be able to get.

COURSES

1. PRESENT DAY PROBLEMS IN EDUCATION. A study of the problems which every teacher meets, together with some of the social aspects of Education in the light of Modern Science.

2. CHILD STUDY. This course is designed to present the facts so far as they are known concerning the nature and development of the mind during the social period of the child's life. Special attention is given to the interpretation

of these facts with reference to their practical significance to the teacher.

3. READING AND LANGUAGE. A study of modern methods of teaching reading and language through the elementary school. A portion of the period each day will be spent reading orally to increase the student's power of expression. Practice in story telling will also be a part of this course.

4. REVIEW AND METHODS IN HISTORY. This course is a review of United States History for the elementary grades from a teacher's point of view.

5. REVIEW AND METHODS IN HISTORY. This is a course in United States History for the upper grades, conducted in the same manner as No. 4.

6. REVIEW AND METHODS IN ARITHMETIC. A review of the principles and processes of Arithmetic and a study of special methods of teaching the subject throughout the grades.

7. REVIEW AND METHODS IN GEOGRAPHY. The study of the subject-matter which is usually presented in an elementary course, together with a consideration of methods of teaching Geography.

8. DRAWING. This course includes work with watercolors, pencil, crayons, and charcoal. The subjects studied are still-life, landscape, pose drawing, design, illustrative drawing, composition and principles of perspective. The object is to enable the students to teach this subject as required in the elementary schools of Nevada.

9. INDUSTRIAL ARTS. A study of industrial arts as taught in the first six grades of the elementary school. The work will include paper-folding, construction work, and weaving for the first three grades, problems in paste-board, wood and textiles for the three succeeding grades.

10. PENMANSHIP. Daily practice in writing to secure legibility, speed and muscular movement and a study of special methods of securing these in the public school.

11. MUSIC. Choral singing and the learning of rote songs suitable for the grades will receive the main emphasis.

12. GAMES. A special course in school-room and playground games and folk dances will be offered if a sufficient number of students desire the work.

13. PHYSICAL CULTURE. Rhythmic exercises, suitable for

rural and graded schools will be given for five minutes daily throughout the session.

The plan followed in conducting Courses 3 to 13 inclusive will be for the instructor to give instruction in the class room to teachers in subject-matter and method, then to follow up this period of instruction by teaching a class of children in the demonstration room, the teachers observing.

In general, where the above subjects are not continuations of last year's courses, new ground will be covered, so that any teacher who enrolled in any of the above courses last year may do so again this year without repeating the work of the previous year. Courses 1, 2, 5, 8, 9, 10, and 11 are entirely new courses.

MODEL SCHOOL

A model school of mixed grades will be conducted in connection with the Summer School. In this model school demonstrations lessons will be given by the instructors of the various subjects.

EXCURSIONS

At the end of each week opportunity will be offered to join excursions taken to various points of interest for the purpose of study and recreation.

COURSES OF STUDY

Two courses of study are offered in the College of Education:

1. An elementary or Junior College course of two years designed to prepare teachers to teach in elementary schools.
2. An advanced or Senior College Course of two years designed to prepare teachers to teach in high schools.

CONDITIONS OF ADMISSION

1. Entrance to the College of Education shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.
2. High schools of other States, if accredited by a State University or other university or college, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.
3. All students entering the College of Education must pass an examination in English composition, whether from the accredited school not. The examination will be held in September of each year.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must be at least twenty years of age. For adequate reasons exceptions to this rule may be made by Faculty and Regents.

ADVANCED STANDING

Advanced standing will be granted by the Committee on Admission and Advanced Standing in consultation with the departments concerned.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Algebra, Elementary (a)	1
	Plane Geometry (b)	1
	Advanced Algebra (c)	1
	Solid Geometry (d)	½
	Plane Trigonometry (e)	½
3.	Physics	1
4.	English History (a)	1
	Ancient History (b)	1
	Medieval and Modern History (c)	1
	American History and Civics (d)	1
5.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
6.	Greek (a)	1
	Greek (b)	1

[1]A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

7. German (a)	1
German (b)	1
8. French (a)	1
French (b)	1
9. Spanish (a)	1
Spanish (b)	1
10. Chemistry	1
11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1
18. Agriculture	½ or 1
19. Manual Training	½

For entrance to the College of Education, the candidates must present:

1. English a and b.
2. Mathematics a and b.
3. Four units—either (a), (b), or (c) as given below:
 (a) Latin, 4 units.
 (b) History, 2 units; Language other than English, 2 units.
 (c) Mathematics; Science, 1 unit; Language other than English, 2 units.
4. Elective, 7 units.

REQUIREMENTS FOR GRADUATION

JUNIOR COLLEGE

Students who satisfy the entrance requirements and who complete the work of the Junior College as outlined in the following table will be graduated with the title Associate, and will receive diplomas entitling the holders to State teachers' certificates of elementary grade.

FIRST YEAR	*1st Sem.*	*2d Sem.*
Education 1	3	3
Hygiene 1	4	4
English 1	3	3
Art 5a	1	1
Music 1	1	1
Elective	3	3
Total	15	15

SECOND YEAR	*1st Sem.*	*2d Sem.*
Education 5	2	2
Education 3	5	5
Art 5a	1	1
Music 2	1	1
Elective	6	6
Total	15	15

NOTE—All students expecting to teach in the grades should elect History 26. Students who have not had a full year's work in high-school geography should elect Geology 26.

SENIOR COLLEGE

ENTRANCE REQUIREMENTS

Graduates of the Junior College of Education shall be eligible to enter the Senior College. Graduates of the Junior College of the College of Arts and Science and of the Junior College of the College of Agriculture shall be eligible to enter the Senior College of the College of Education, provided they shall have taken Hygiene 1, 8 units, and Psychology 1 and 2, 6 units.

Students coming from other institutions of learning may gain admission by meeting the same or equivalent requirements.

Students doing their major work in Education should take the courses in the following order:

First Year—Some Biological Science.

Second Year—Psychology 1 and 2.

Third Year—Psychology 21 or 22, or Education 22.

Fourth Year—Education 3.

DIPLOMAS AND DEGREES

Students who satisfy the entrance requirements and who complete the work of the Senior College as outlined below will be graduated and will receive diplomas entitling them to State teachers' certificates of the high-school grade.

The work is so arranged that a student may register in both the College of Education and in the College of Arts and Science. A student who complies with the demands of both colleges may be graduated and receive a diploma from both. A student who is graduated from both shall receive but one degree—the Degree of Bachelor of Arts from the College of Arts and Science. A student who graduates from the College of Education only, will receive the Degree of Bachelor of Science in Education.

SPECIAL COURSES

Special courses in music, drawing and physical culture will be given for students who wish to prepare for such special work. Only persons who have natural aptitude for such work, and who have had some training along these lines will be permitted to undertake special courses. Anyone desiring this work should communicate with the College of Education in advance.

CORRESPONDENCE COURSES

The courses in Education and Psychology may be taken by correspondence. Credit will be given according to the amount of work done. Teachers wishing to enroll should address:

College of Education,
University of Nevada,
Reno, Nevada.

REQUIREMENTS FOR RECOMMENDATION IN HIGH-SCHOOL SUBJECTS

The minimum amount of work required in each of the following subjects in order to receive from the University a recommendation for teaching those subjects in high schools is as follows:

Mathematics—Eleven units, based on four years of high-school study, or seventeen units based on two or three years of high-school study.

Latin—Fourteen units, including prose composition, based on four years of high-school study.

French—Courses 1, 2, 3, and 4, based on no entrance French.

German—Courses 1, 2, 4, and 5, based on no entrance German.

English—Eighteen units, based on two or more years of high-school work.

History—Courses 1 and 2 and further work amounting to eight units. This requirement will be reduced in the case of students whose high-school preparation is good.

Biology—Sixteen units, including Hygiene 1.

Physics—Twelve units, based on one year of high-school work.

Chemistry—Courses 2 and 4, based on one year's high-school work.

COURSE OF STUDY

The course of study includes, in addition to the requirements of Military Science or Physical Education for Women, work aggregating 120 semester-units[1] credit as follows:

1. Ten units in education.

2. Sufficient work in at least two important high-school subjects to secure from the University a teacher's recommendation for those subjects.

3. Elective—The student must elect in two departments not fewer than twenty-four nor more than thirty-six units, and not more than twenty-four units shall be in any one department. Courses in the College of Education, in the College of Arts and Science, and in the Departments of Agriculture and Horticulture will be accepted as meeting this requirement. (The choice between twenty-four and thirty-six units and between twelve and twenty-four units rests with the student.)

4. Free Elective—The remaining units necessary to make a total of sixty units may be freely elected from the courses offered in the College of Arts and Science and in the College of Agriculture, and from courses in Mineralogy, Metallurgy, Assaying, Agricultural Chemistry, and Surveying, provided the requirements as to prerequisites in the various departments are met.

COURSES OF INSTRUCTION

The course in Psychology and in Education, and other required courses are as follows:

VI. English	XIV. Psychology
VII. Music	XVI. Hygiene
VIII. Art	XXXVIII. Military Science and Tactics
XIII. Education	XL. Physical Education for Women

VI. ENGLISH LANGUAGE AND LITERATURE

MR. ELLIS

0. COMPOSITION AND RHETORIC. A course designed for students who are not equipped for pursuing English 1. *No credits.* Mr. Ellis.

1. COMPOSITION AND RHETORIC. The theory of Rhetoric is

[1] By a semester-unit is meant the equivalent of work demanded by a lecture course scheduled for one hour a week for one semester, or by a laboratory course scheduled for two and one-half hours a week for one semester.

developed from the study of English prose masterpieces, and the principles thus established are applied in daily and weekly themes. *Both semesters. Section 1, 8–9, M. W. F.; Section 2, 9–10, T. Th. S.; Section 3, 10–11, M. W. F. Six credits.* 102 Stewart Hall. Mr. Ellis.

VII. MUSIC

Junior and Senior College Courses

PUBLIC SCHOOL MUSIC: Text-book, Song Reader, McLaughlin and Gilchrist.

1. ELEMENTS OF MUSIC. Musical notation and terms, rhythmic and melodic problems, sight-singing, ear-training, part-work, technical fundamentals. *Both semesters. Hours and credits to be arranged.* 206 Morrill Hall.

2. PRIMARY METHODS. Presentation of each technical problem in order; study of child voice; voice training; interpretation of songs; individual practice. *First semester. Hours and credits to be arranged.* 206 Morrill Hall.

3. GRAMMAR METHODS. Presentation of each technical problem in order; further voice drill, musical interpretation; individual practice; study of different public school text-books and publishing houses; working programs; repertoire of songs. *Second semester. Hours and credits to be arranged.* 206 Morrill Hall.

VIII. ART

ASSISTANT PROFESSOR LEWERS

Junior College Courses

5*a*. TEACHERS' COURSE. Pictorial representation. Perspective figure and animal drawing. Design. Historic ornament. *Hours and credits to be arranged.* Physics Building. Assistant Professor Lewers.

5*b*. TEACHERS' COURSE. Continuation of first-year course in all branches and its application to each grade in public school work.

XIII. EDUCATION

PROFESSOR ORDAHL, MISS DAY

Junior College Courses

1. SCIENCE OF EDUCATION. This course is designed to give the background and scientific basis for practice work in Course 3 in Education. The first semester is devoted to the study of elementary principles of psychology in relation to education. In the second semester a more detailed study is

made of the learning process. *Both semesters, 10–11, M. W. F.* 101 Stewart Hall. Professor Ordahl, Miss Day.

3. THEORY AND PRACTICE OF TEACHING. Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussion, and private conferences.

(*a*) One hour daily throughout the year is devoted to practice teaching by every student. This includes four units of work, for periods of seven weeks each, in the following subjects: Elementary school English, geography, history, arithmetic. Additional subjects may be arranged if desired. Carefully prepared general and daily lesson plans are submitted to the supervisor and regular grade teacher by the student-teacher before taking charge of a class. After each lesson the student-teacher meets the supervisor in private conference for criticism and suggestions.

(*b*) Two hours each week are spent by the class with the supervisor, observing lessons taught by the city teachers in the various elementary school subjects. These are made the basis of class discussions upon principles and methods of teaching.

(*c*) Three hours each week are devoted to the study of school problems, principles of teaching, and special methods in elementary school English, geography, history, and arithmetic, paralleling the practice teaching.

Only those students who show a disposition to do their best and who are able to achieve reasonable success in teaching will be permitted to continue in this course. From time to time the stronger students are given opportunity to test their power by substituting for the regular teachers in the city school in case of sickness. Upon such occasions the student assumes the entire responsibility of the work until the return of the regular teacher, unless this period exceeds one week. *Prerequisite:* Education 1. *Both semesters, 8–9, M. W. F.; 10–11, T. Th., and from 9–10, every day. Ten credits.* Orvis Ring School Building. Miss Day.

NOTE—Education 3 is also open to Senior College students. See same under Senior College Courses.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Psychology 5.) Lectures, readings, observation, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its

meaning to the teacher in the management and organization of school activities. *Prerequisite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

7. CHILD LITERATURE. The study of selected prose and poetry from literature written for and of children and child life. The purpose of the course is a better understanding of child nature through a psychological study of this type of literature. (Given in 1913–14 if a sufficient number of students desire it.) *Both semesters. Hours to be arranged. Two credits.* Orvis Ring Building. Miss Day.

Senior College Courses

21. EDUCATIONAL PSYCHOLOGY. (*Psychology 21.*). This course deals with the development of the thought process, the formation of ideals, and the social nature of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor Ordahl.

23. HISTORY OF EDUCATION. A study of the development of educational ideals from the time of the Greeks and Hebrews to the present, with special reference to the forces which have operated in the evolution of the various historic ideals and practices. *Both semesters, 9–10, M. W. F. Six credits.* 101 Stewart Hall. Professor Ordahl.

3. THEORY AND PRACTICE OF TEACHING. (See Education 3, Junior College Courses.) Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observation of model lessons, class discussions, and private conferences. *Prerequisite:* Education 21, or Psychology 1 and 3. *Both semesters, 8–9, M. W. F.; 10–11, T. Th., and any hour from 9 to 3 for practical teaching.* Orvis Ring. School Building. Miss Day.

XIV. PSYCHOLOGY

Junior College Courses

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes, and the emotional life. *Prerequisite or parallel:* Hygiene 1, or Zoology 5. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings and laboratory work. A comparative study is made of the most recent experimental work on the genesis and function of consciousness in animal and human behavior. *Second semester. Lectures, 8–9, M. W. F. Laboratory, two one-hour periods per week, 1–2 or 2–3, T. Th. Three credits.* 101 Stewart Hall. Professor Ordahl.

NOTE—Psychology 1 and 3 should be taken in the Sophomore year.

5. CHILD AND ADOLESCENT PSYCHOLOGY. (Education 5. Lectures, readings, observation, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite: Education 1, or Psychology 1 and 2. Both semesters, 10–11, T. Th. Four credits.* 101 Stewart Hall. Professor Ordahl.

[illegible]

21. EDUCATIONAL PSYCHOLOGY. (Education 21.) This course deals with the development of the human person, the formation of ideas and the moral nature of the pupil at different periods of development, together with a discussion of the most important principles of education. *First semester. Hours to be arranged. Four credits.* 101 Stewart Hall. Professor [illegible]

22. [illegible]

[illegible]

cess of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, T. F. Four credits.* 301 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

XXXVIII. MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

1. DRILL. Squad, company, and battalion drills; ceremonies; first aid to the injured; military signaling; band practice; small-arms target practice; minor tactics and guard duty. *Prescribed for all male students.*[1] *Eight semesters, 11–12, M. T. W. Th. One credit.* Captain Applewhite.

Junior College Courses

2. REGULATIONS. Recitations in Infantry Drill Regulations, Firing Regulations for Small Arms, Field Service Regulations, and Manual of Guard Duty. *Prescribed for Freshmen and Sophomores.*[1] *Two months' course during winter, 11–12, F. One credit.* Cadet Officers.

Senior College Courses

23. DUTIES OF COMPANY OFFICERS. Theoretical instruction in subjects with which a Company Officer of Infantry Volunteers or Militia should be familiar. *Prescribed for Juniors and Seniors.*[1] *Two months' course during winter, 11–12, F. One-half credit.* Captain Applewhite.

XL. PHYSICAL EDUCATION FOR WOMEN

MISS SAMETH

NOTE.—The course in Physical Education is offered to all young women in the University and is required in the Freshman and Sophomore years as part of the regular work. Upon entering the class, students are carefully examined by a physician, with particular attention to the lungs and heart action. Upon recommendation of this physician, this work may be postponed to the Junior and Senior years. At the beginning of the year, physical measurements of all members of the physical education classes are taken. The aim is to develop a strong symmetrical physique, with an easy and graceful poise of the body. Systematic exercises in the gymnasium and out of doors makes it possible to obtain these results.

Women taking this course will be required to provide themselves with regulation suits and black gymnasium shoes. The suits will cost about $7 each. A deposit of 50 cents is required for locker keys. This will be refunded at the close of the year to those who return their keys.

1. CALISTHENICS. Free work, light apparatus, games; folk,

[1] For exceptions, see Organization of Battalion of Cadets, page 67.

national and esthetic dancing. *Both semesters. Hours and credits to be arranged.* Gymnasium.. Miss Sameth.

2. CALISTHENICS. Free work including Swedish marching, apparatus, folk, national and esthetic dancing. *Both semesters. Hours and credits to be arranged.* Gymnasium. Miss Sameth.

3. ADVANCED WORK. (Elective for Juniors and Seniors.) Games, more difficult dancing; one recitation a week on assigned readings in physical education. *Hours and credits to be arranged.* Gymnasium. Miss Sameth.

4. MATERIAL COURSE. This class will meet once a week at hours to be arranged. An attendance of not less than twelve will be required for its continuance. The object is to give those who are going out to teach simple games, folk dances and setting-up drills suitable for use in the grades. In connection with this course, students will be required to teach a class of children for half an hour each week. Those who take this work will be required to take one additional physical education period in order to make up gymnasium credit, if they need it. *Both semesters. Hours and credits to be arranged.* Miss Sameth.

5. ATHLETICS. Two or four hours per week of athletics (skating, basket-ball, baseball, tennis, hockey, etc.) may be substituted for one or two hours of formal work or games.

6. CORRECTIVE GYMNASTICS. Students who, upon examination show a need of this work (especially those showing postural curvature of the spine, or weak arches), will be advised to take corrective gymnastics as often as possible. It may be substituted for other work in the same way as athletics.

All classes meet three times a week. Once every other week a walk will be substituted for games in the gymnasium.

ROSTER OF STUDENTS
September, 1912—March, 1913

ROSTER OF STUDENTS
September, 1912—March, 1913

RECIPIENTS OF SCHOLARSHIPS AND HONORS

THE UNIVERSITY GOLD MEDALS
Ethel R. Thompson
August Holmes
School of Arts and Science

THE F. O. NORTON SCHOLARSHIP
William I. Smyth
Mackay School of Mines

THE SCHOLARSHIP FROM A FRIEND OF THE UNIVERSITY
Robert Perry Farrer
School of Arts and Science

REGENTS' SCHOLARSHIPS
Archie Trabert
School of Mechanical Engineering

Lysle Rushby
School of Arts and Science

Andrew Crofut
School of Arts and Science

Alice Meffley
School of Education

Walter Clarence Jepson
University High School

THE H. H. HOWE SCHOLARSHIP
George McCreery
School of Arts and Science

THE AZBO E. CHENEY SCHOLARSHIP
Thomas P. Walker
School of Civil Engineering

THE PHILO C. BENNETT PRIZES
First—Eunice Cagwin and Florence White
Second—Clara Smith.
School of Arts and Science

HONOR STUDENTS

Graduate Students—Frances Dorothy Parker.

Seniors—Daniel E. Bruce, Donald C. Cameron, Helen R. Hobbins, August Holmes, Ethel R. Thompson.

Juniors—Frank C. Gignoux, Eunice Cagwin, Helen Higgins, Florence White, Elizabeth Winters, Lena Hauss, Millie Donohue.

Sophomores—Nell Morrow, Edwina O'Brien, Carrie Linsea.

Freshmen—Floyd S. Bryant, Dorothy Bird, Maude Price, Thos. P. Walker.

For the school year 1911–1912 the Regents allowed scholarships of $100 each on the basis of one scholarship for each county. These scholarships were awarded on the recommendation of the Board of Education and the Principal of the county high school of each county, one condition being that the student recommended be in need of financial assistance. The awards were made as follows:

Alberto Axt	$100.00
Routh Akin	100.00
Marion Binford (one semester only)	50.00
W. H. Bowler	100.00
Floyd Bryant	50.00
Corrine L. Christiansen	100.00
A. D. Crofut	100.00
Carna H. Damm	100.00
W. J. Duddleson	100.00
Louis McNeilly (left before end of second semester)	95.00
Marjorie Mead	100.00
Frances Price	100.00
Lysle Rushby	100.00
Elizabeth Reilly	50.00
Gertrude Shade	100.00
Paul Schraps	100.00
Archie Trabert	100.00

GRADUATES

Diplomas and Degrees were awarded on Commencement Day, May 15, 1912, as follows:

MASTER OF ARTS

Samuel Bradford Doten — Frances Dorothy Parker

MASTER OF SCIENCE IN EDUCATION

Helena Elizabeth Joy

BACHELOR OF ARTS, COLLEGE OF ARTS AND SCIENCE

Elda Marion Barber — Hazel Mary Ohmert
Rowena Ethel Glass — Florence Nightingale Reed
Helen Ruthven Hobbins — Ethel Thompson
Mathilda Jepsen — Margaret Angela Langwith
Charles LeRoy Brown — August Holmes
Isabelle Cyril Schuler

BACHELOR OF SCIENCE, SCHOOL OF MINES

Walter Williams Anderson — Roland Moore Seaton
Daniel Eldred Bruce — Paul Curtis Schraps
Donald Caleb Cameron — Claude Teel
Virgil Monroe Henderson

BACHELOR OF SCIENCE, SCHOOL OF MECHANICAL ENGINEERING

Edgar Ford Pearson — Raymond Spencer
William Donald Linton, Jr. (December 21, 1911)

BACHELOR OF SCIENCE, SCHOOL OF CIVIL ENGINEERING

Carl Lampe Tibbals

BACHELOR OF SCIENCE IN EDUCATION, COLLEGE OF EDUCATION

Edwin Eugene Selzer Williams

SENIOR COLLEGE DIPLOMA, COLLEGE OF EDUCATION

Rowena Ethel Glass — Hazel Mary Ohmert
Helen Ruthven Hobbins — Florence Nightingale Reed
Mathilda Jepsen — Ethel Thompson
Edwin Eugene Selzer Williams

JUNIOR COLLEGE DIPLOMA, COLLEGE OF EDUCATION

Viola Mariea Blevins — Laura Dickinson
Augusta Harrison Brusso — Gladys Margaret Jones
Mollie Dimple Curler — Alpha Irene Rulison
Mary Margaret Sullivan

ROSTER OF STUDENTS

GRADUATE

Boeke, Alma Marie	Arts and Science	Reno
Brown, Charles L.	Arts and Science	Reno
Church, Mrs. Florence H.	Arts and Science	Reno
Elam, Anna S.	Arts and Science	Reno
MacNair, Georgia A.	Arts and Science	Reno
Williams, Edwin E.	Arts and Science	Reno

SENIORS

Anderson, Morris D.	Civil Engineering	San Jose, Cal.
Bradner, Donald B.	Mines	Marion, Ind.
Cagwin, Eunice Adelaide	Arts and Science	Sparks
Charles, Mortimer	Agriculture	Reno
Davey, Lillian	Arts and Science	Grass Valley, Cal.
DeFlon, Marie	Arts and Science	Eureka
Donohue, Mildred E.	Arts and Science	Bodie, Cal.
Dorn, Norman Lester	Mechanical Engineering	Los Angeles, Cal.
Frisch, Emma Elizabeth	Arts and Science	Reno
Gignoux, Frank C.	Mech. and Elec. Eng.	Reno
Gilcrease, Leonard L.	Mech. and Elec. Eng.	Lemoore, Cal.
Hauss, Carolyn E.	Arts and Science	San Francisco, Cal.
Higgins, Helen Brelsford	Arts and Science	Reno
Jones, Bertha Rachel	Arts and Science	Sweetwater
Lewis, Leola	Arts and Science	Reno
Lusk, Ward W.	Mech. and Elec. Eng.	Reno
Mackay, Eric Reay	Agriculture	Sydney, Australia
Patrick, Lloyd Brown	Agriculture	Reno
Reynolds, Arthur Icard	Mines	Grass Valley, Cal.
Settlemeyer, William Herman	Civil Engineering	Gardnerville
Smith, Wilhelmina	Arts and Science	Bodie, Cal.
Smither, Thomas McCourt	Mines	Reno
Stebbings, Lee W.	Arts and Science	Spencer, Iowa
White, Florence Evelyn	Arts and Science	Reno
Wilson, Joseph W.	Agriculture	Nordyke
Wilson, Nathaniel	Mech. and Elec. Eng.	Reno
Winter, Edith	Arts and Science	Whiterock
Winter, Elizabeth	Arts and Science	Whiterock
Withers, Clerimond	Arts and Science	Reno

JUNIORS

Barber, Neil Kenneth	Mech. and Elec. Eng.	Reno
Cazier, John Ingersol	Agriculture	Wells
Cowgill, Philip S.	Civil Engineering	Reno
Cozzalio, Anne P.	Arts and Science	Truckee, Cal.

Crotty, Marguerite E.	Arts and Science	Lovelock
Elder, Macon	Arts and Science	Auburn, Cal.
Evans, Leslie	Agriculture	Reno
Farrer, Robert Perry	Arts and Science	Carson City
Frazer, Gladys Echo	Arts and Science	Reno
Hamilton, Claude	Mech. and Elec. Eng.	Silver City
Harriman, Lester	Agriculture	Northam
Hilton, Charles Rhoads	Arts and Science	Modesto, Cal.
Linsea, Carrie Edith	Arts and Science	Fallon
McPhail, Harvey Franklin	Mech. and Elec. Eng.	Sparks
Mahan, Grace	Arts and Science	Reno
Menardi, John B., Jr.	Agriculture	Reno
Milentz, Carl Albert	Agriculture	St. Louis, Mo.
Morrow, Nell Katherine	Arts and Science	Reno
Neasham, Myrtle V.	Arts and Science	Reno
Noble, Martha	Arts and Science	Elko
O'Brien, Edwina	Arts and Science	Sparks
Parsons, Willis	Mines	El Cajon, Cal.
Pennell, William	Mech. and Elec. Eng.	Reno
Smith, Clara I.	Arts and Science	Reno
Smyth, William Isaac	Mines	Reno
Van Leer, Alice Ruff	Arts and Science	Elko
Webster, Clarke	Mech. and Elec. Eng.	Reno
Wolfson, Henry	Arts and Science	New York City

SOPHOMORES

Abbott, Elmore Stuart	Mech. and Elec. Eng.	Modesto, Cal.
Akin, Mabel Routh	Arts and Science	Goldfield
Bacon, Hazel Belle	Education	Reno
Bacon, Chester	Mech. and Elec. Eng.	Reno
Banigan, Frank	Arts and Science	Reno
Barber, Elda	Education	Reno
Barton, Horace	Mech. and Elec. Eng.	Reno
Bird, Dorothy Jane	Arts and Science	Reno
Boggs, Arthur Samuel	Mech. and Elec. Eng.	Ludwig
Bower, Silvia	Education	Lamoille
Bowler, Walter Herbert	Mines	Tonopah
Bringham, Robert Amedee	Arts and Science	Reno
Brown, Ethel Elizabeth	Arts and Science	Reno
Bryant, Floyd Sherman	Arts and Science	Sparks
Christiansen, Corinne Louise	Education	Gardnerville
Coe, Gei	Agriculture	Fallon
Damm, Carna H.	Arts and Science	Lovelock
Dessar, Delwyn	Mech. and Elec. Eng.	New York City
Dewar, Archibald James	Agriculture	Elko
Dickey, Mary Veronica	Arts and Science	Reno
Dondero, Fuiro Nicholas	Mines	Reno
Duddleson, William J.	Agriculture	Ely
Ferris, Lehman Ashmead	Mech. and Elec. Eng.	Reno

Franzman, Herbert Jay	Mines	Reno
Fulton, Margaret	Arts and Science	Reno
Hancock, John Leslie	Civil Engineering	Gold Hill
Hazlett, Margaret	Arts and Science	Reno
Hecox, J. Russell	Mines	San Jose, Cal.
Herz, Elsie Anna	Arts and Science	Reno
Hubbard, Edith Lorene	Education	Constantia, Cal.
Hussman, Ada Elizabeth	Arts and Science	Gardnerville
Hylton, Jessie Gertrude	Arts and Science	Hylton
Hylton, John Leland	Agriculture	Hylton
Jones, Juanita	Education	Reno
Kent, Ira Longfellow	Agriculture	Fallon
Krall, Edwin White	Arts and Science	Reno
Latapie, George	Mech. and Elec. Eng.	Reno
Lloyd, Marie W.	Education	Reno
McCreery, George L.	Arts and Science	Carson City
McDonald, Joseph F.	Mech. and Elec. Eng.	Tonopah
McKinley, Peter G.	Mech. and Elec. Eng.	Garfield, Ark.
McQuiston, Harold Tracy	Civil Engineering	Chico, Cal.
Marsen, Laurena Elizabeth	Arts and Science	Truckee, Cal.
Mead, Marjorie	Arts and Science	Fallon
Meffley, Alice	Education	Reno
Ogilvie, George Francis	Arts and Science	Lee
O'Neill, Clara	Arts and Science	Reno
Orr, Elda Ann	Arts and Science	Reno
Ostroff, Robert Allison	Arts and Science	Reno
Painter, Waterfield	Mines	Reno
Paterson, Chester	Mech. and Elec. Eng.	Reno
Pflaging, Adelbert	Arts and Science	Modesto, Cal.
Pohl, Gertrude M.	Education	Austin
Price, Frances Gertrude	Arts and Science	Reno
Price, Sarah Maude	Arts and Science	Reno
Rudawski, Beatrice	Arts and Science	Reno
Rushby, Ida Lysle	Arts and Science	Reno
Shade, Gertrude	Arts and Science	Virginia City
Sheehy, Richard Henry	Mech. and Elec. Eng.	Canada
Shufelt, Alson Anderson	Arts and Science	Reno
Sinai, John S.	Agriculture	Stockton, Cal.
Smith, Emma Nevada	Education	Reno
Smith, Frances P.	Arts and Science	Bodie, Cal.
Stinson, Pearl	Arts and Science	Reno
Swain, Earl Hazzard	Mech. and Elec. Eng.	Goldfield
Trabert, Archibald	Mech. and Elec. Eng.	Tonopah
Walker, Thomas Percy	Mech. and Elec. Eng.	Reno
Ware, Robert Herman	Arts and Science	Bodie, Cal.
West, Mary	Education	Yerington
White, Euleila Lane	Arts and Science	Reno
Wiley, Elmer Gilmore	Mech. and Elec. Eng.	Wadsworth
Williams, Josephine Gilbert	Arts and Science	Reno

FRESHMEN

Archer, Olin W.	Mines	Peoria, Ill.
Axt, Alberto	Arts and Science	Reno
Beaman, Ralph	Arts and Science	Wellington
Beard, George K.	Mech. and Elec. Eng.	Modesto, Cal.
Bowen, Logan H.	Mech. and Elec. Eng.	Modesto, Cal.
Butler, Vivian	Arts and Science	Reno
Cafferata, Russell	Mech. and Elec. Eng.	Reno
Cazier, Edward Coin	Agriculture	Wells
Coffin, Mila L.	Arts and Science	Reno
Coffin, Stanford[1]	Arts and Science	Reno
Constable, James	Mech. and Elec. Eng.	Reno
de Hart, Bernice	Arts and Science	Reno
Engle, Glenn F.	Agriculture	Auburn, Cal.
Engle, Vivian M.	Arts and Science	Auburn, Cal.
Enos, Joseph B.	Arts and Science	Oakland, Cal.
Faber, Edwin	Mines	Peoria, Ill.
Friberg, Neva M.	Education	Reno
Fuss, Alvin J.	Agriculture	Lovelock
Glass, Alton E.	Mech. and Elec. Eng.	Reno
Golden, Frank	Arts and Science	Reno
Gould, Zoe	Education	Reno
Hamilton, Edith N.	Education	Reno
Haun, Joye C.	Mech. and Elec. Eng.	Modesto, Cal.
Healey, Bourke	Civil Engineering	Goldfield
Heffernan, Helen S.	Education	Goldfield
Herz, Emma	Arts and Science	Reno
Heward, Elmer S.	Agriculture	Reno
Heward, Elsie	Arts and Science	Reno
Hinkley, Wilmer O.	Civil Engineering	Modesto, Cal.
Hobbins, Thomas	Mech. and Elec. Eng.	Reno
Hofer, Gladys	Arts and Science	Reno
Jackson, Albert	Arts and Science	New York
Jepsen, Paulina	Arts and Science	Gardnerville
Jepson, Walter	Arts and Science	Verdi
Johnson, Leslie E.	Arts and Science	Wells
Keith, Erma	Arts and Science	Reno
Krummes, Simon	Arts and Science	Gardnerville
Lampe, William H.	Agriculture	Gardnerville
Langford, Sylvia	Arts and Science	Reno
Layman, Oliver W.	Mech. and Elec. Eng.	Reno
Lemberger, John	Agriculture	Fort Bidwell, Cal.
Lemmon, Vera	Arts and Science	Reno
Leon, Mary	Arts and Science	Reno
McCubbin, Lloyd	Mech. and Elec. Eng.	Reno
Mack, Edith	Arts and Science	Reno
McVicar, Grace	Education	Smith
Menardi, Margaret	Arts and Science	Reno

[1]Deceased.

Miller, Ruth	Arts and Science	Reno
Murray, Ruth	Arts and Science	Reno
Osborn, Benjamin H.	Agriculture	Watsonville, Cal.
Parks, Robert M.	Mines	Reno
Pearson, Jack W.	Mech. and Elec. Eng.	Reno
Powers, Ina H.	Arts and Science	Virginia City
Powers, William M.	Agriculture	Los Angeles, Cal.
Price, Alvion J.	Arts and Science	Fallon
Quigley, John	Mines	Downieville, Cal.
Raitt, Mary J.	Arts and Science	Sparks
Rannells, Cordelia	Arts and Science	Reno
Reilly, Charles P.	Arts and Science	Wells
Rice, James W.	Mines	Ely
Rielly, Elizabeth	Arts and Science	Goldfield
Riley, Linford D.	Mech. and Elec. Eng.	Yerington
Robinson, Warren C.	Mech. and Elec. Eng.	Mound House
Rose, Louis A.	Mech. and Elec. Eng.	Modesto, Cal.
Scheeline, Harry H.	Arts and Science	Reno
Schlauch, Emmaline	Agriculture	Latah, Wash.
Schoer, Christina	Education	Wells
Sheldon, Zelda	Arts and Science	Reno
Sielaff, Selma	Arts and Science	Reno
Silva, Frank	Mines	Bogus, Cal.
Smith, Raymond G.	Arts and Science	Modesto, Cal.
Somers, Louis	Arts and Science	Goldfield
Steinmetz, Dorothy	Arts and Science	Reno
Stouky, Harry	Arts and Science	Cronberg, Cal.
Tranter, Edwin F.	Arts and Science	Carson City
Tullis, Fred C.	Arts and Science	Sheldon, Ill.
Van Dalsem, Laurence I.	Mines	Oroville, Cal.
Wendell, Lay A.	Mines	Winnemucca
Wheeler, Arthur C.	Mines	Rhode Island
Woods, Ruth	Education	Horn Silver
Young, Georgianna	Arts and Science	Reno

SPECIALS

Abel, David D.	Agriculture	Winnemucca
Adamson, Mrs. Laura Smith	Arts and Science	Reno
Allen, Robert A.	Mech. and Elec. Eng.	Virginia City
Anderson, Mrs. W. W.	Home Economics	Reno
Applewhite, H. L.	Mech. and Elec. Eng.	Reno
Applewhite, Mrs. H. L.	Home Economics	Reno
Armstrong, Ruby	Home Economics	Reno
Arnold, Fred A.	Agriculture	Reno
Ballew, Mrs. E. K.	Home Economics	Reno
Bartlett, Mrs. George	Home Economics	Reno
Bates, Maud E.	Arts and Science	Verdi
Beebe, Mrs. A. M.	Arts and Science	Reno

Beebe, Mrs. Mary B.	Arts and Science	Reno
Belford, Mrs. Samuel	Home Economics	Reno
Bloomensteil, Mrs. Edith	Arts and Science	Reno
Borchert, Earl	Mines	Cherry Creek, Cal.
Boys, Harry R.	Mines	Paso Robles, Cal.
Brown, Mrs. Frances C.	Education	Reno
Brown, Mildred	Arts and Science	Reno
Broy, Edna	Education	Eureka
Budge, Orin E.	Arts and Science	Goldfield
Burch, Madelina	Home Economics	Reno
Busch, Mrs. Martha	Arts and Science	Reno
Callahan, Julia	Arts and Science	Reno
Carpenter, Howard	Mines	Reno
Case, Frances	Arts and Science	Paradise Valley
Chapman, Lloyd	Mines	Reno
Claflin, Charles Leland	Mines	Bakersfield, Cal.
Coon, Nan	Home Economics	Reno
Cullen, John A.	Agriculture	Indianapolis, Ind.
Curtin, James	Agriculture	Rochester
Deen, Luther B.	Arts and Science	Blue Mountain, Miss.
Delahide, John J.	Mines	Jackson, Cal.
Dinsmore, Mrs. S. C.	Home Economics	Reno
Eddy, Mrs. I. H.	Arts and Science	Reno
Evans, Rowena	Arts and Science	Reno
Fake, Frank C.	Mech. and Elec. Eng.	Oakland, Cal.
Fancher, Charles R.	Arts and Science	Modesto, Cal.
Fassett, Mrs. Carol S.	Agriculture	Reno
Fergusson, Mrs. S. P.	Home Economics	Reno
Freeman, John E.	Mech. and Elec. Eng.	Yerington
Gaines, Mrs. B.	Home Economics	Reno
Gates, Mrs. Lucy A.	Home Economics	Reno
Golden, Mrs. Mamie L.	Arts and Science	Reno
Grayson, Harry Watson	Mines	Vallejo, Cal.
Hardy, Frederick C.	Agriculture	Nevada City, Cal.
Harris, Grace A.	Arts and Science	Reno
Harvey, Ford	Mech. and Elec. Eng.	Reno
Hawcroft, Neva	Arts and Science	Reno
Hawkins, Mrs. Prince	Home Economics	Reno
Hawkins-Ambler, Dr. George	Arts and Science	Reno
Henningsen, George	Agriculture	Gardnerville
Henriques, Frederick C.	Arts and Science	New York
High, James D.	Agriculture	Modesto, Cal.
Holloway, Otis L.	Mech. and Elec. Eng.	Reno
Hosking, Fred N.	Mines	Placerville, Cal.
Hovey, Harry H.	Agriculture	Wellington
Hurd, Mrs. Norma	Arts and Science	Reno
Huskey, Mrs. Anne	Arts and Science	Reno
Jones, Beatrice E.	Arts and Science	Reno

Kniffen, Leslie	Agriculture	Reno
Kreitzer, Mrs. J. L.	Home Economics	Reno
Laden, Helene	Arts and Science	Reno
Lansing, Mrs. Alice	Arts and Science	Reno
Layman, Harold L.	Civil Engineering	Reno
Libbey, Mrs. Kate	Arts and Science	Reno
McDonald, Harry	Mines	Reno
Mackenzie, Andrew M.	Mech. and Elec. Eng.	Los Angeles, Cal.
McKenzie, Mrs. George	Arts and Science	Reno
Mitchell, Edwin H.	Mech. and Elec. Eng.	Berkeley, Cal.
Morrison, Mrs. S. K.	Arts and Science	Reno
Neeld, Harper C.	Mech. and Elec. Eng.	Mercedes, Texas
Norton, Mrs. F. O.	Home Economics	Reno
Nurse, Ruth V.	Arts and Science	Brooks, Cal.
Percival, Harold Fred	Civil Engineering	French Gulch, Cal.
Perkins, Cary	Civil Engineering	Oakland, Cal.
Phillips, Charles	Mech. and Elec. Eng.	Reno
Piggott, Earl	Mech. and Elec. Eng.	Astoria, Oregon
Preston, Mrs. A. W.	Arts and Science	Reno
Preston, Margaret	Arts and Science	Reno
Pruett, Dale Beade	Mech. and Elec. Eng.	Reno
Rand, Rachel	Arts and Science	Palisade
Randall, Dixie	Agriculture	Dayton
Raymond, Phillip E.	Mech. and Elec. Eng.	Reno
Rose, Mrs. I. A.	Home Economics	Reno
Rowlands, John P.	Mines	Berkeley, Cal.
Schlauch, Dot	Home Economics	Latah, Wash.
Schmitt, Lizzie K.	Arts and Science	Reno
Shannon, Leo T.	Mech. and Elec. Eng.	Oakland, Cal.
Siebert, Mrs. Fred J.	Home Economics	Reno
Springs, Mrs. Richard A.	Arts and Science	Reno
Stevens, Ernest W.	Mech. and Elec. Eng.	Orange, Mass.
Stewart, Mrs. W. J.	Home Economics	Reno
Stoddard, Mrs. Richard	Home Economics	Reno
Taylor, Blanche	Home Economics	Reno
Thompson, R. V.	Mines	Los Angeles, Cal.
Varney, Mrs. Emma	Home Economics	Reno
Whitmore, John E.	Mech. and Elec. Eng.	Palisade
Williams, Mrs. E. L.	Arts and Science	Reno
Wilson, B. V. L.	Arts and Science	Reno
Young, Mrs. George J.	Home Economics	Reno

VISITORS

Becker, Aloysius	Home Economics	Reno
Branion, Mrs. Bessie	French	Reno
Ordahl, Mrs. George	Physical Education	Reno
Trout, Rev. W. D.	Greek	Reno

LIST OF STUDENTS—SUMMER SCHOOL FOR TEACHERS

Allen, Carrie H.	Silver City
Booth, Miss Libbie C.	Reno
Bradley, Anna E.	Tonopah
Bray, Florence L.	Carson City
Bray, Mrs. Mary	Sparks
Bray, Mildred N.	Carson City
Bennett, Georgie W.	Tonopah
Bowler, George H.	Mesquite
Breen, Mamie	Eureka
Campbell, Mary	Goldfield
Church, Mrs. Margaret	Modesto, Cal.
Cicala, Mrs. Katherine	Eureka
Crawford, Elizabeth	Reno
De Sautels, Mrs.	East Ely
Dieringer, Retta	Austin
Drake, Nancy	Warsaw, Mo.
Evans, Jessie	Reno
Fischer, Ida	Manhattan
Folsom, Ethel	Reno
Freemer, Mrs. Pearl	Reno
Fowler, Ruth	Genoa
Gardner, Rose	Elko
Gee, Martha	Schurz
Ginocchio, Albina	Reno
Gooch, Roy	Cedarville
Gulling, Mrs. C. G.	Fallon
Hancock, Edna	Gold Hill
Hansen, Dorothy	Reno
Harris, Edith	Dayton
Harris, Grace	Reno
Haywood, Vern	Denver, Colo.
Hellwinkle, Miss	Gardnerville
Horgan, Madeline	Rawhide
Kennedy, Edith	Manhattan
Kline, John I.	Verdi
Knuthson, Margaret	Sattley, Cal.
Lattin, Lois	Fallon
Loder, Echo	Reno
Lonkey, Verdi	Susanville, Cal.
McGowan, Frances	Yerington
McKenzie, Mrs. Hazel	Tonopah
McKeown, Mr. E. L.	San Martin, Cal.
McMullin, Etta	Leeds, Utah
McNaughton, Janet	Eureka
Meeker, Ella P.	Sparks
Mundy, Mrs.	Johnnie
Myles, Margaret	Austin

Nelson, Mrs. Dun Glen
Nunn, Mame (Withdrawn) Virginia City
Obersteg, Sarah I. Eureka
Ogilvie, Olive Lee
Potts, Irene Austin
Porter, Mrs. Elko
Price, Josephine Fallon
Rannels, Katherine Reno
Reagan, Rose Reno
Richardson, Mrs. Nellie Reno
Rising, Carol Dayton
Roush, Pearl Reno
Russell, Mae Reno
Sabin, Ida Carson City
Sanger, Lizzie Carson City
Schulz, Elizabeth Stewart
Scott, Mrs. Ida Reno
Sherritt, Isabelle Truckee, Cal.
Shirley, Florence Dayton
Shirley, Inez Dayton
Smith, Lizzie P. Tonopah
Stevens, Emma Seven Troughs
Stout, Lydia Leamington, Utah
Strotts, Mrs. Adda Vya
Stumpff, Zora Fairview
Sullivan, Edna Tonopah
Sullivan, Jo Reno
Sullivan, Nina Carson City
Sutten, Edith Fallon
Suttle, Irene Tuscarora
Taylor, Hazel Silver City
Thompson, Carrie Pioche
Trimble, Esther Cedarville, Cal.
VanNamee, Frances Ogden, Utah
Westlake, Pearl Carson City
Willis, Gladys Fallon
Wilkinson, Nelle Elko
Wright, Frances Reno
Young, Nita Lovelock

SUMMARY

College of Arts and Science

Seniors	15	
Juniors	15	
Sophomores	33	
Freshmen	41	
Graduates	6	
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College of Engineering

Mackay School of Mines—

Seniors	3	
Juniors	2	
Sophomores	5	
Freshmen	9	
Specials	10	
		29

School of Mechanical and Electrical Engineering—

Seniors	5	
Juniors	5	
Sophomores	15	
Freshmen	13	
Specials	16	
		54

School of Civil Engineering—

Seniors	2	
Juniors	1	
Sophomores	2	
Freshmen	2	
Specials	3	
		10

College of Agriculture and Home Economics

School of Agriculture—

Seniors	4	
Juniors	5	
Sophomores	6	
Freshmen	9	
Specials	11	
		35

School of Home Economics—

Specials		24

College of Education

Seniors	0	
Juniors	0	
Sophomores	11	
Freshmen	7	
Specials	2	
		20

Total University Schools	318
Enrollment of men	167
Enrollment of women	151
Total Summer School for Teachers	86

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GENERAL INDEX

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1913-1914

TWENTY-SIXTH ANNUAL NUMBER

UNIVERSITY OF NEVADA BULLETIN

VOL. VIII JULY 1, 1914 No. 3

REGISTER

OF THE

UNIVERSITY OF NEVADA

For the Year 1913-1914

WITH ANNOUNCEMENTS FOR THE YEAR 1914-1915

TWENTY-SIXTH ANNUAL NUMBER

PUBLISHED QUARTERLY
BY THE
UNIVERSITY OF NEVADA
RENO, NEVADA


UNION
LABEL

OFFICE OF THE
BOARD OF REGENTS, UNIVERSITY OF NEVADA,
RENO, NEVADA, July 15, 1914.

To His Excellency, TASKER L. ODDIE,
Governor of the State of Nevada.

SIR: The Regents of the University of Nevada have the honor to submit herewith the Annual Register of the University for the year 1913–1914, containing the courses of study adopted July 11, 1914, general information, the membership of the Faculty, and the enrollment of the students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: HOSEA E. REID,
Chairman.

GEORGE H. TAYLOR, *Secretary.*

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PREFATORY NOTE

THE REGISTER. The register number of the University Bulletin is issued annually. It presents a complete outline of the organizations constituting the University, its affiliated organizations, and its scope; it also lists the members of the Faculty and the student body for the current year and the courses of study to be offered for the coming year. As these announcements are prepared some time in advance, slight changes are sometimes necessary at the beginning of the college year.

REGISTRATION. New students are requested, where possible, to send their high-school or other credentials to the Registrar at least two weeks before the beginning of the first semester in August. Registration takes place during the first three days of the semester, when all students are expected to present themselves. Registration cards are issued from the Registrar's office. Fees and deposits are payable at the Comptroller's office upon presentation of card from the Registrar.

BOARD AND ROOM. The University maintains a residence hall for men and one for women, and also a dining hall. Applications for rooms should be made early in the summer.

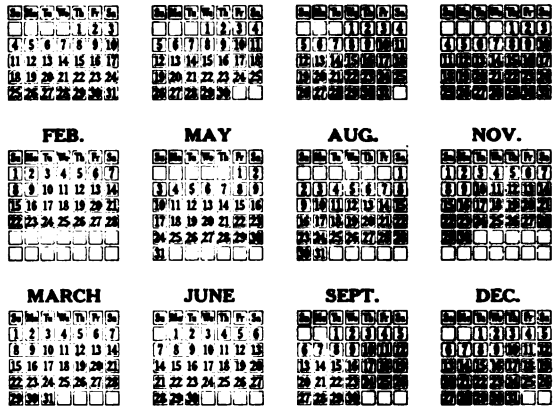
UNIVERSITY OFFICES. The offices of the President, the Registrar, the Comptroller, and the Dean of the College of Arts and Science are on the first floor of Morrill Hall. The office of the Dean of the College of Agriculture is on the first floor of Hatch Station. The office of the Dean of the College of Engineering is on the first floor of the Electrical Building.

CALENDAR OF GRADUATES. A bulletin giving the records of graduates and a list of former students with present addresses is in process of preparation. When issued, a copy will be sent to each member of the Alumni Association and to such former students as request it.

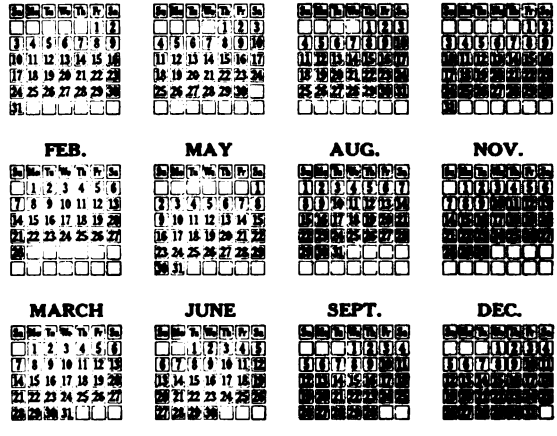
COMMUNICATIONS. Requests for the annual register and other publications, and inquiries relating to the admission of students should be addressed to the REGISTRAR. Communications relating to matters directly in charge of the administration, and all correspondence bearing upon the general interest of the University should be addressed to the PRESIDENT, University of Nevada, Reno, Nevada.

SUMMER SCHOOL. For information concerning the Summer School for Teachers, address the COLLEGE OF EDUCATION, University of Nevada, Reno, Nevada.

1914 - CALENDAR - 1914



1915 - CALENDAR - 1915



UNIVERSITY CALENDAR

1914 FIRST SEMESTER, 1914–1915

August 24–25	Monday–Tuesday	Examinations for admission
August 24–25	Monday–Tuesday	Reexaminations to remove conditions
August 25–26	Tuesday–Wednesday	Matriculation and registration
August 27	Thursday	Recitations and lectures begin
November 26–29	Thursday–Sunday	Thanksgiving recess
December 23	Wednesday, 4:30 p.m.	Holiday vacation begins
1915		
January 3	Sunday	Holiday vacation ends

SECOND SEMESTER, 1914–1915

January 4–5	Monday–Tuesday	Examinations for admission
January 4–5	Monday–Tuesday	Reexaminations to remove conditions
January 5–6	Tuesday–Wednesday	Matriculation and registration
January 7	Thursday	Recitations and lectures begin
April 2–5	Friday–Monday	Easter recess
		Inspection of cadets
May 1	Saturday, 4:30 p.m.	Senior examinations end
May 9	Sunday	Baccalaureate sermon
May 11	Tuesday, 4:30 p.m.	Semester examinations end
May 12	Wednesday	COMMENCEMENT DAY

March 16, 1914.

The Regents, President, and Faculty of the University of Nevada desire in this public manner to pay tribute to the worth and services of a former colleague, Mr. JULES ERNST GIGNOUX, who died March 13, 1914.

Mr. GIGNOUX was the first Professor of Mining and Metallurgy in the University when it was at Elko, and since that time has shown a deep interest in educational matters connected with the University and the public schools.

The heartfelt sympathy of the University is extended to the bereaved wife and children.

Resolved, That a copy of this expression of sympathy be sent to the bereaved family, and that the same be published in the *University Sagebrush*, and in the *Reno Evening Gazette*, and the *Nevada State Journal*.

Signed: ARTHUR A. CODD,
ROBERT LEWERS,
J. E. CHURCH, JR.,
D. B. HUNTLEY,
Committee on behalf of the University.

INSERT—STUDENT MEMORIAL RESOLUTIONS

In Memoriam

Joseph Edward Stubbs

1850-1914

Educator, Minister, College President, Public Servant,
Citizen of undivided loyalty and devotion

President of the University since 1894

He found the University weak in material resources, he left it strong; he found its departments undeveloped, he left them mature; he found its campus rude, he left it beautiful. He directed as a coworker, yet with a firm hand. To his faculty he was a friend, and in sorrow or in need he gave full measure of sympathy and assistance.

He sought to make the University a potent factor in the development of Nevada, and through his public service extended its influence beyond the borders of the State.



JOSEPH EDWARD STUBBS, D.D., LL.D.
Late President of the University

Painting by Mrs. Mary Curtis Richardson. Plate by courtesy of the *Sunset Magazine*.

Presented to the University by the Faculty, Alumni, former Students, and Friends, Commencement, 1912, as a token of esteem to President Stubbs, and in anticipation of his retirement from active service in 1915, when he would have attained the age of sixty-five.

OFFICERS OF GOVERNMENT

THE REGENTS OF THE UNIVERSITY

The Hon. Hosea E. Reid (1911–1915), Chairman Reno
The Hon. Charles B. Henderson (1911–1915) Elko
The Hon. Arthur A. Codd (1913–1917) Reno
The Hon. James W. O'Brien (1913–1915) Sparks
The Hon. Walter E. Pratt (1913–1917) Goldfield

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Mr. Charles H. Gorman, Comptroller Reno

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Dean of the College of Arts and Science and of the College of Education John C. Watson
Dean of the College of Agriculture Charles S. Knight
Registrar Louise M. Sissa
Librarian Joseph Dieffenbach Layman

OTHER OFFICERS

Master of Lincoln Hall SCOTT E. JAMESON
Mistress of Manzanita Hall Mrs. A. E. KAYE
Superintendent of Grounds JOSEPH LYNCH
Secretary to the President CAROLYN M. BECKWITH

STANDING COMMITTEES OF THE UNIVERSITY FACULTY

The President and the Vice-President of the University are ex officio members of all standing committees. The Deans of the several Colleges are ex officio members of the Committee on Admission and Advanced Standing, of the Committee on Registration and Delinquent Scholarship, and of the Library Committee.

Student Affairs for Men LEWERS, APPLEWHITE, PALMER, SCOTT, JAMESON
Student Affairs for Women Mrs. KAYE, Miss LEWERS, Miss DAY, Miss RIEGELHUTH, Miss SAMETH
Athletics SCRUGHAM, HASEMAN, APPLEWHITE
Public Exercises ROSS, APPLEWHITE, Miss SAMETH, TURNER, Miss DENNY
Honors and Scholarships Miss WIER, KNIGHT, LINCOLN
Public Health MACK, BOYD, Miss MACK
Registration and Delinquent Scholarship HASEMAN, FRANDSEN, Miss BARDENWERPER
Military Affairs APPLEWHITE, WILSON, JONES
Admission and Advanced Standing M. ADAMS, HARTMAN, THOMPSON
Schedules and Examinations BOARDMAN, Miss POLLOCK, POWERS
University Publications CHURCH, WATSON, A. E. HILL
Library LAYMAN, CHURCH, H. W. HILL
Graduate Courses R. ADAMS, Miss DELAGUNA, H. W. HILL
Appointment Committee HARTMAN, M. ADAMS, Miss DAY

UNIVERSITY FACULTY

OFFICERS OF INSTRUCTION AND ADMINISTRATION AND OTHER OFFICERS

With the exception of the President, the names of all professors and officers in the first group whose appointments antedate April, 1907, are arranged in order of appointment to any rank above that of instructor. The names of all other professors, associate professors, assistant professors, instructors, and officers are arranged in their respective groups according to order of appointment to their present rank.

JOSEPH EDWARD STUBBS[1]
President of the University

Instructor in Greek and Latin, Ohio Wesleyan University, 1872–75; B.A., Ohio Wesleyan University, 1873; M.A., 1876; Superintendent of Schools, Ashland, Ohio, 1880–86; President, Baldwin University, Ohio, 1886–94; Honorary D.D., German Wallace College, 1890; President, Ohio College Association, 1891–92; President of the University of Nevada, 1894–1914; Professor of Psychology and Ethics, 1894–95; Professor of Political Science and Ethics, 1895–1904; Professor of Elementary and International Law, 1904–11; President Association of American Agricultural Colleges and Experiment Stations, 1899–1900; LL.D., Ohio Wesleyan University, 1905. Absent on leave, 1912–13.

ROBERT LEWERS
Vice-President and Acting President of the University
Professor of Elementary and International Law and Municipal Accounting

Teacher, Public Schools, Mill Station, Nevada, 1882–83; Sutro, Nevada, 1884–85; Dayton, Nevada, 1886–89; Registrar, University of Nevada, 1890–1906; Professor of Political Economy and Principal of the Commercial School, 1890–1911; Vice-President of the University of Nevada, 1906–; Professor of Elementary and International Law and Teacher of Commercial Subjects, 1911–13; Professor of Elementary and International Law and Municipal Accounting, 1913–; Acting President, 1912–13; 1914–.[1] Riverside Hotel.

RICHARD BROWN
Superintendent of Buildings and Master of Lincoln Hall, Retired.
Assistant in Shop Work

Cutter in United States Mint, Carson City, 1889–91; Superintendent of Department of Mechanical Engineering, University of Nevada,

[1] Died May 27, 1914.

1891–99; Superintendent of Buildings and Grounds, University of Nevada, 1891–1912; Superintendent of University Dining Hall, University of Nevada, 1895–1912; Master of Lincoln Hall, University of Nevada, 1896–1905; Master of Lincoln Hall, University of Nevada, 1906–12; Superintendent of Buildings, 1912–13; Assistant in Shop Work, 1914–.

925 North Virginia Street. Phone 1659-R.

JAMES EDWARD CHURCH, JR.

Professor of the Latin Language and Literature

Teacher, District Schools, Ogemaw County, Michigan, 1885–86; Principal, Public School, Birch Run, Michigan, 1887–88; A.B., University of Michigan, 1892; Instructor in Latin and German, University of Nevada, 1892–94; Head of the Department of Latin, 1892–; Assistant Professor of Latin, 1894–95; Associate Professor of Latin, 1895–96; Professor of Latin, 1896–(absent on leave, 1898–1901); Graduate Student, Comparative Philology, University of Michigan, 1898–99; Ph.D. (Classical Philology, Archæology, and Education), Munich, 1901; Student, Archæology and Art, Italy and Greece, 1901.

358 Washington Street. Phone 1855-R.

LAURA DELAGUNA

Professor of Romanic Languages and Literature

Instructor in English, Mills Seminary, California, 1888–89; Instructor in French and English, Oakland Seminary, California, 1890–91; B.A., Leland Stanford Junior University, 1894; Student Romance Languages, New York, 1894–95; Student Romance Languages, Rome, Paris, 1895–96; Instructor in Modern Languages, University of Nevada, 1896–99; Assistant Professor of Modern Languages, 1899–1901; Associate Professor of Modern Languages, 1901–06; Professor of Modern Languages, 1907–11; Professor of Romanic Languages and Literature, 1911–.

1029 North Virginia Street.

JEANNE ELIZABETH WIER

Professor of History and Political Science

Teacher, Public Schools, Rockwell, Iowa, 1889–92; B.Di., Iowa State Normal School, 1893; Assistant Principal, High School, Heppner, Oregon, 1893–95; Student, Leland Stanford Junior University, 1896; Acting Assistant Professor of History, University of Nevada, 1899–1901; B.A.(History), Leland Stanford Junior University, 1901; Associate Professor of History, University of Nevada, 1901–06; Secretary, Nevada Historical Society, 1904–; Professor of History, 1907–.

844 North Center Street. Phone 95.

PETER FRANDSEN
Professor of Biology

B.A., University of Nevada, 1895; Teacher, Public School, Silver Creek, Nevada, 1895–96; A.B., Harvard University, 1898; A.M., 1899; Tutor and Assistant in Zoology, Harvard University, 1898–99; Graduate Student, Harvard University, 1899–1900; Assistant in Zoology, Harvard University and Radcliffe College, 1899–1900; Assistant Professor of Zoology and Bacteriology, University of Nevada, 1900–02; Associate Professor Zoology and Bacteriology, 1902–03; Professor of Zoology and Bacteriology, 1903–06; Professor of Biology, 1906–. Absent on leave, for travel and study in Europe, 1909–10.

210 Maple Street. Phone 1612–W.

PATRICK BEVERIDGE KENNEDY[1]
Professor of Botany, Horticulture, and Forestry

Associate, Ontario Agricultural College, 1892; B.S.A., Toronto University, 1894; Assistant Chemist, Ontario Agricultural College, 1895; Ph.D., Cornell University, 1899; Laborer, Division of Agrostology, United States Department of Agriculture, Washington, D. C., 1899; Assistant in Agrostology, Division of Agrostology, 1899; Expert and Agent in charge of Experimental Work, Division of Agrostology, 1900; Botanist and Horticulturist, Nevada Agricultural Experiment Station, 1900–13; Associate Professor of Botany and Horticulture, University of Nevada, 1900–02; Professor of Botany, Horticulture and Forestry, 1902–13. Absent on leave, for travel and study in England, 1910–11.

SAMUEL BRADFORD DOTEN
Director of the Nevada Agricultural Experiment Station
Professor of Entomology

B.A., University of Nevada, 1898; Instructor in History and Mathematics, University of Nevada, 1898–1900; Entomologist and Meteorologist, Nevada Agricultural Experiment Station, 1900–05; Instructor in Mathematics and Entomology, 1900–02; Assistant Professor of Mathematics and Entomology, 1902–03; Assistant Professor of Entomology, Meteorology, and Mathematics, 1903–05; Principal of the University High School, and Teacher of Mathematics, Consulting Entomologist, and Meteorologist, Nevada Agricultural Experiment Station, 1905–06; Entomologist, Experiment Station, and Professor of Entomology, 1906–; M.A., University of Nevada, 1912; Director Nevada Agricultural Experiment Station, 1913–.

323 West Street. Phone 1898–W.

[1] Resigned December 31, 1913.

ROMANZO ADAMS

Professor of Economics and Sociology

Teacher, Public School, Bloomingdale, Wisconsin, 1886–87; Marshalltown, Iowa, 1887–88; B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Principal, Public School, Ireton, Iowa, 1892–94; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1897; Professor of Economics and Sociology, and Principal of the Normal Department, Western College, Iowa, 1898–1900; Graduate Student, University of Chicago, 1900–02; Fellow in Sociology, University of Chicago, 1901–02; Ph.D. (Sociology and Philosophy), University of Chicago, 1904; President, Nevada State Teachers' Association, 1905–10; Director, N. E. A., 1908–10; Professor of Education and Sociology, University of Nevada, 1902–11; Acting Professor of Economics, 1911–12; Professor of Economics and Sociology, 1912–. 735 West Street. Phone 1498.

JAMES GRAVES SCRUGHAM

Dean of the College of Engineering

Professor of Mechanical and Electrical Engineering

B.M.E., Kentucky State University, 1900; with Creaghead Engineering Company, Cincinnati, Ohio, 1900; Graduate Student, University of Michigan, summer, 1901; Director of Manual Training, High School, Highland Park, Chicago, 1901-03; with Metropolitan Elevated Railway, Chicago, 1902; Instructor in Mechanical Engineering, Kentucky State College, Summer School, 1903; Assistant Professor of Mechanical Engineering, University of Nevada, 1903–05; Member of International Electrical Congress, 1904; with Abner Doble Company, San Francisco, summer, 1905–06; Associate Professor of Mechanical Engineering, University of Nevada, 1905–06; M.E., Kentucky State University, 1906; Instructor in Mechanical Engineering, Summer School, University of Wisconsin, 1907; Engineer of Tests, Oregon Short Line Railroad, summers 1908–11; Assistant Engineer of Tests, Southern Pacific Company, summers 1912–13; Consulting Engineer, Elko-Lamoille Power Company, 1912–; Professor of Mechanical Engineering, University of Nevada, 1906–12; Professor of Mechanical and Electrical Engineering, 1912–; Dean of the College of Engineering, 1914–. Nevada and Eighth Streets. Phone 1700-W.

MAXWELL ADAMS

Professor of Chemistry

Graduate, State Normal School of West Virginia, 1888; Student in the State University of West Virginia, 1890–91; A.B. (Chemistry), Stanford University, 1895, A.M., 1896; Ph.D., University of Chicago, 1904; Assistant in Chemistry, Leland Stanford Junior University,

1895–97; Instructor in Chemistry, Leland Stanford Junior University, Summer School, 1897; Teacher of Chemistry and Physics, State Normal School, Chico, California, 1897–1900; Instructor in Chemistry, University of Chicago, Extension Department, 1900–01; Director of Physical Science and Acting Vice-President, State Normal School, Chico, California, 1900–06; Consulting Chemist, Diamond Match Company, 1901–06; Fellow, American Association for the Advancement of Science; Professor of Chemistry, University of Nevada, 1906–. Absent on leave, first semester, 1914.

29 West Ninth Street. Phone 1502.

WINFRED BERDELL MACK

Professor of Bacteriology and Veterinary Science

D.V.M., New York State Veterinary College, Cornell University, 1904; Fellow in Pathology and Bacteriology, Cornell University, 1904–05; Assistant in Pathology and Bacteriology, Cornell University, 1905–06; Veterinarian and Bacteriologist, Nevada Agricultural Experiment Station, and Professor of Bacteriology and Veterinary Science, University of Nevada, 1906–; Director of State Hygienic Laboratory, 1909–.

829 Lake Street. Phone 498.

HERBERT WYNFORD HILL

Professor of the English Language and Literature

B.L., University of California, 1900; Instructor in English, Utah State Agricultural College, 1900–03; Graduate Student and Reader, University of Chicago, June, 1903–June, 1904; Ph.M., University of Chicago, March, 1904; Fellow in English, University of Chicago, June, 1904–September, 1904; Instructor in English, University of Texas, 1904–06; Graduate Student, University of Chicago, June, 1905–September, 1905; Fellow in English, University of Chicago, June, 1906–September, 1907; Ph.D., University of Chicago, 1911; Professor of the English Language and Literature, University of Nevada, 1907–.

JOSEPH DIEFFENBACH LAYMAN

Librarian

Teacher in Public Schools of California, 1881–83; B.L., University of California, 1888; First Assistant Librarian, University of California, 1888–1907; Librarian, University of Nevada, 1907–.

255 University Terrace. Phone 866.

HORACE PRENTISS BOARDMAN

Professor of Civil Engineering

Rodman, U. S. Military Post, Fort Sheridan, Illinois, November, 1888–August, 1889; with Field Engineer Corps, World's Columbian

Exposition, June, 1891–January, 1892; Instrumentman, Memphis Artesian Water Company, January–September, 1892; B.S. (Civil Engineer), University of Wisconsin, 1894; C.E., University of Wisconsin, 1911; with Engineering Department, Sanitary District of Chicago, on Topographic Surveys and in charge of Cement Testing Laboratory, June, 1894–December, 1896; miscellaneous engineering work, Chicago, January–August, 1897; Assistant Engineer, Chicago and Alton Railway (Acting Bridge Engineer), August, 1897–August, 1901; Assistant Engineer, Bridge and Building Department, Chicago, Milwaukee and St. Paul Railway, August, 1901–March, 1904; Superintendent, Savage Construction Company (bridge substructure), 1904; Draftsman and Checker, (bridge substructure design), Chicago, Milwaukee and St. Paul Railway Bridge and Building Department, January–August, 1905; Superintendent, Fitzsimmons and Connell Company (bridge substructure), August–December, 1905; Engineer and Superintendent, Savage Construction Company (concrete arches), 1906; Engineer in charge of branch canal projects, Sanitary District of Chicago, January–August, 1907; Professor of Civil Engineering, University of Nevada, 1907–.

737 Evans Avenue. Phone 1803.

LEON WILSON HARTMAN

Professor of Physics

B.S., Cornell University, 1898; A.M., 1899; Graduate Scholar in Physics, 1899; Assistant in Physics, 1900–01; Professor of Physics, Kansas Agricultural College, 1901–02; Frazer Fellow in Physics, University of Pennsylvania, 1902–03; Ph.D., 1903; Tyndale Fellow in Physics of the University of Pennsylvania, Göttingen, 1903–04; Instructor in Physics, Cornell University, 1904–05; Assistant Professor of Physics, University of Utah, 1905–06; Associate Professor of Physics, 1906–09; Professor of Physics, 1909; Fellow A.A.A.S., Am. Phys. Soc., Utah Academy of Science; Professor of Physics, University of Nevada, 1909–.

215 Maple Street. Phone 1214–M.

CARL ALFRED JACOBSON

Professor of Agricultural Chemistry

B.S., Carleton College, Northfield, Minnesota, 1903; Graduate Student, Johns Hopkins University, Baltimore, Maryland, 1903–04; Europe, 1901–02; Instructor in Chemistry, York City High School, York, Pennsylvania, 1904–07; M.S. (*in absentia*), Carleton College, 1907; Ph.D., Johns Hopkins University, 1908 (Chemistry, Physical Chemistry, and Physics); Fellow and Research Chemist, Rockefeller

Institute for Medical Research, New York, 1908–09; Professor of Agricultural Chemistry, University of Nevada, and Chief Chemist, Nevada Agricultural Experiment Station, 1909–. Absent on leave, 1911–13, to conduct investigations in Organic and Biological Chemistry at the Universities of Cracow, Austria; Geneva, Switzerland; Uppsala, Sweden; and Halle, Germany.

935 North Virginia Street.

CHARLES HASEMAN

Professor of Mathematics and Mechanics

A.B., Mathematics, Indiana University, 1903; Instructor in Mathematics and Physics, High School, Elwood, Indiana, 1903–05; A.M., Indiana University, 1906; Assistant in Mathematics, Indiana University, 1905–06; Ph.D., Mathematics, University of Göttingen, 1907; Instructor in Mathematics, Indiana University, 1907–08; Assistant Professor of Mathematics, Indiana University, 1908–09; Associate Professor of Mathematics, University of Nevada, 1909-10; Professor of Mathematics and Mechanics, University of Nevada, 1910–.

JOHN CALVIN WATSON

Dean of the College of Arts and Science and of the College of Education
Professor of the Greek Language and Literature

A.B., Eureka College, 1892; A.B., Harvard University, 1894; Teacher of Latin and Greek, High School, Menominee, Michigan, 1894–96; Principal, 1895–96; Teacher of Latin, Lake View High School, Chicago, 1896–99; Graduate Student in Classical Philology, Harvard University, 1899–1902; A.M., 1900, and Ph.D., 1902, Harvard University; Assistant in Classics, Radcliffe College, 1900–01; Instructor in Latin, Cornell University, 1902–07; Assistant Professor of Greek, University of Nevada, 1910–11; Professor of the Greek Language and Literature, 1911–; Dean of the College of Arts and Science and of the College of Education, 1914–.

749 Lake Street. Phone 1478-M.

GEORGE ORDAHL

Professor of Education and Psychology

Principal, Public Schools, Merrillville, Indiana, 1900–01; Corvallis, Montana, 1901–03; A.B., University of Oregon, 1905; A.M., 1906; Fellow, Clark University, Worcester, Massachusetts, 1906–08; Ph.D., Clark University, 1908; Professor of Psychology and Education, Geneva College, Beaver Falls, Pennsylvania, 1908; Assistant Professor of Education and Psychology, University of Nevada, 1909–11; Professor of Education and Psychology, 1911–; Director of Summer School for Teachers, 1912–. On leave, first semester, 1914–15.

STERLING PRICE FERGUSSON
Professor of Meteorology and Climatology

Assistant to H. H. Clayton at Blue Hill Observatory, 1887–90; Assistant in Charge of Instruments, Blue Hill Observatory, 1890–1909; Meteorologist, 1909–10; Associate Meteorologist, Nevada Experiment Station, 1910–; Professor of Meteorology and Climatology, University of Nevada, 1911–.

41 West Ninth Street. Phone 1396.

HUGH LAFAYETTE APPLEWHITE
Professor of Military Science and Tactics

Graduate, United States Military Academy, 1897; appointed Second Lieutenant of Infantry, 1897; transferred to 6th Artillery and assigned to Siege Battery E, 1898; Mustering-out Officer 1st D. C. Volunteer Infantry, Washington, D. C., 1898; promoted to First Lieutenant, 1899; promoted to Captain, 1901, and was assigned to and organized the 103d Company Coast Artillery at Fort Howard, Maryland; graduated from School of Submarine Defense, Fort Totten, New York, 1905; on duty, Jackson Barracks, New Orleans, 1906; on general recruiting duty, 1906–1908; retired, 1908; detailed Professor of Military Science and Tactics, Peacock Military College, San Antonio, Texas, 1908–10; on duty reorganizing militia of Utah, 1910–12; Professor of Military Science and Tactics, University of Nevada, 1912–.

155 University Terrace. Phone 1659–J.

CHARLES S. KNIGHT
Dean of the College of Agriculture
Professor of Agronomy

B.S., Agriculture, University of Wisconsin, 1907; Assistant in Feed and Fertilizer Inspection, University of Wisconsin, July, 1907–January, 1908; Assistant in Agronomy, Kansas State Agricultural College, January, 1908–09; Instructor in Agronomy, University of Nevada, 1909–10; Assistant Professor of Agronomy, University of Nevada, 1910–12; Chief Agriculturist, Nevada Sugar Company, 1912–13; Professor of Agronomy, University of Nevada, 1913–; Dean of the College of Agriculture and Director of Agricultural Extension, 1914–.

125 East Seventh Street. Phone 1590–W.

DWIGHT BRUNEL HUNTLEY
Acting Professor of Mining and Metallurgy

Ph.B., University of California, 1875; Post-Graduate Student in Mining and Metallurgy, University of California, 1878; U. S. Geological Survey work, 1881–82; Mill Superintendent, Grand Central Mining

Company, Tombstone, Arizona, 1883–86; Superintendent, Carlisle Mining Company, New Mexico, 1886–87; Mine Superintendent, United States of Colombia, South America, 1888; Mine Manager, Iron Silver Mining Company, Leadville, Colorado, 1891; Superintendent, Morning Mining Company, Coeur d'Alene, Idaho, 1892–95; Superintendent, Tom Boy Mining Company, Telluride, Colorado, 1895–96; Manager, DeLamar Mining Co., Ltd., Idaho, 1896–1901; Consulting Engineer, Metabele Gold Reefs and Estates Co., Ltd., Rhodesia, South Africa, 1902–04; Acting Professor of Mining and Metallurgy, University of Nevada, 1909–10; Manager, Santa Rosa Mining Company, Zacatecas, Mexico, 1912; Acting Professor of Mining and Metallurgy, University of Nevada, 1913–14.

FRANCIS CHURCH LINCOLN
Professor of Mining and Metallurgy

S.B., Mining Engineering, Massachusetts Institute of Technology, 1900; Assayer, Butterfly-Terrible Gold Mining Company, Ames, Colorado, 1900–01; Professor of Chemistry and Metallurgy, New Mexico School of Mines, Socorro, New Mexico, 1901–04; E.M., New Mexico School of Mines, 1904; Member of American Institute of Mining Engineers, 1903–; Assistant Superintendent, Ruby Gold and Copper Company, Ortiz, Sonora, Mexico, 1904–05; Lessor mine and mill of Arizona Gold and Copper Company, Patagonia, Arizona, 1905–06; Consulting Mining Engineer, New York City, 1906–07; A.M., Columbia University, 1907; Professor of Geology and Mineralogy, Montana State School of Mines, Butte, Montana, 1907–10; Consulting Mining Engineer, New York City, 1910–11; Ph.D., Columbia University, 1911; Assistant Professor of Mining Engineering, University of Illinois, 1911–13; Resident Mining Engineer, Bolivian Development and Exploitation Company, La Paz, Bolivia, 1913–14; Professor of Mining and Metallurgy, University of Nevada, 1914–.

FREDERICK WESTON WILSON
Professor of Animal Husbandry

B.S., Kansas State Agricultural College, 1905; Assistant Animal Husbandman, in Charge of Farmers' Institute work, Arizona Agricultural Experiment Station, 1905–06; Associate Animal Husbandman in Charge of Arizona Agricultural Experiment Station Farm, 1906–08; Secretary Arizona Cattle Growers' Association, 1908–12; Superintendent of Agricultural Department, Arizona State Fair, 1905–08; Superintendent Sheep Exhibit, 1908–12; Animal Husbandman in Charge of the Station Farm, Arizona Agricultural Experiment Station, 1908–12; Graduate Student, University of Illinois, 1912–13; M.S., University of Illinois, 1913; Professor of Animal Hus-

bandry, and Animal Husbandman, University of Arizona, 1913–14; Professor of Animal Husbandry, University of Nevada, 1914–.

REUBEN CYRIL THOMPSON

Professor of the Latin and Greek Languages and Literature

B.A., McMinnville College, 1899; B.A., Harvard University, 1901; M.A., Harvard, 1902; Instructor in Latin and History, High School, Boise City, Idaho, 1902–05; Professor of Latin, State Normal School, Albion, Idaho, 1905–08; Instructor in History and Civics, Idaho State Summer Normals, 1907–08; Instructor in Latin and Greek, University of Nevada, 1908–09; Assistant Professor of Latin and Greek, and Associate Principal of the University High School, 1909–10; Associate Professor of Latin and Greek, and Principal of the University High School, 1910–12; Associate Professor of Latin and Greek, University of Nevada, 1912–14; Professor of the Latin and Greek Languages and Literature, 1914–.

1101 Riverside Avenue. Phone 1874–R.

J CLAUDE JONES

Professor of Geology and Mineralogy; Curator of the Mackay Museum

A.B., University of Illinois, 1902; Assistant in Geology, University of Illinois, 1904–05; Instructor in Geology, University of Illinois, 1905–06; Research Assistant in Geology, University of Chicago, 1907–09; Instructor in Physiography, University of Kansas, summer term, 1907; Instructor in Physiography, University of Chicago, summer term, 1908; Member of the State Geological Survey of Illinois, 1906–09; Instructor in Geology and Mineralogy, University of Nevada, 1909–10; Geologist, Mammoth National Mines Company, 1912; Geologist and Mineralogist, Nevada State Mining Laboratory, 1911–; Research Associate, Carnegie Institute of Washington, 1913–; Curator of the Mackay Museum, University of Nevada, 1909–; Assistant Professor of Geology and Mineralogy, University of Nevada, 1910–14; Professor of Geology and Mineralogy, 1914–.

736 West Street. Phone 1214–W.

OSCAR P. JOHNSTONE[1]

Associate Professor of Physiology and Hygiene

Ph.B., College of Grinnell, Iowa, 1897; M.S., University of Iowa, 1902; M.D., Rush Medical College, 1905; Fellow in Chemistry, University of Iowa, 1900–01; Assistant in Physiology, Cornell University, 1901–03; Assistant in Physiology, Cornell University, Summer School, 1903; Assistant in Pathology, Rush Medical College, 1903–04; Fellow in Pathology, Rush Medical College, 1904–06; Professor of Pathology, University of Colorado, 1905–07; Substitute in Pathology, Rush Medical

[1] Resigned June 1, 1914.

College, for Professor Ricketts, summer of 1907; for Professor LeCount, spring of 1908; Pathologist, Mercy Hospital, Pittsburg, Pennsylvania, 1908–09; Associate Professor of Physiology and Hygiene, University of Nevada, 1909–14; Assistant State Hygienic Laboratory, 1909–14.

821 North Center Street. Phone 1539.

MARK F. BOYD

Associate Professor of Bacteriology and Hygiene

M.D., University of Iowa, 1911; Assistant Instructor in Pathology and Bacteriology, University of Iowa, 1911–12; Bacteriologist, Bacteriological Laboratory, Iowa State Board of Health, 1911–12; Health Officer and City Bacteriologist, Oskaloosa, Iowa, 1912–13; Local State Food and Dairy Inspector for Oskaloosa, Iowa, 1912–13; M.S., University of Iowa, 1913; Charles Follen Folsom Teaching Fellow in Hygiene, Harvard Medical School, 1913–14; C.P.H., School for Health Officers, Harvard University and Massachusetts Institute of Technology, 1914; Associate Professor of Bacteriology and Hygiene, University of Nevada, 1914–; Pathologist and Bacteriologist, State Hygienic Laboratory, 1914–.

745 Lake Street. Phone 145.

KATE BARDENWERPER

Associate Professor of Home Economics

Graduate State Normal School, San José, California, 1880; Teacher, Public Schools, Carson City, Nevada, 1880–86; First Assistant, High School, Carson City, 1886–94; Critic Teacher, Training School, University of Nevada, 1894–99; Student, Leland Stanford Junior University 1898–99; Student, University of California, 1900–01; B.S. (Domestic Arts), Armour Institute of Technology, Chicago, 1900; B.S. (Home Economics), 1901; Instructor in Home Economics, University of Nevada, 1904–05; Student, Summer School, University of California, 1902 and 1903; Assistant Professor of Home Economics, University of Nevada, 1905–14; Associate Professor of Home Economics, 1914–.

1029 North Virginia Street.

ALBERT ELLSWORTH HILL

Associate Professor of the English Language and Literature

A.B., University of Chicago, 1899; Instructor in English, High School, Peoria, Illinois, 1899–1900; Superintendent of City Schools, Lake Forest, Illinois, 1900–04; Librarian of Modern Language Library, University of Chicago, 1904–12; Assistant in English, *ibid.*, 1905–07; Associate, *ibid.*, 1907–09; Instructor, *ibid.*, 1909–13; Assistant Professor of English, University of Nevada, 1913–14; Associate Professor of the English Language and Literature, 1914–.

44 West Eighth Street. Phone 1295–R.

SANFORD CROSBY DINSMORE

Commissioner of Food and Drugs Control, and Sealer of Weights and Measures

B.S., University of Maine, 1903; Assistant Chemist, Maine Agricultural Experiment Station, 1903-05; Chemist, Nevada Agricultural Experiment Station, 1905-09; Assistant Professor of Agricultural Chemistry, University of Nevada, 1906-13; In Charge of Food and Drugs Control, 1910-13; Deputy Sealer, Department of Weights and Measures, 1912-13; Commissioner, Food and Drugs Control, 1913-; Sealer, Department of Weights and Measures, 1913-.

223 University Terrace. Phone 1744.

KATHERINE LEWERS

Associate Professor of Freehand Drawing

Student, St. George's Art School, Glasgow, 1893-94; Supervisor of Drawing and Penmanship, Public Schools, Reno, 1894-97; Student with Howard Helmick, Washington, D. C., 1897-99; received prize scholarship New York School of Design, 1900; studied at New York School of Applied Design, 1902; Instructor in Freehand Drawing, University of Nevada, 1905-07; Photographer, Nevada Experiment Station, 1905-; Assistant Professor of Freehand Drawing, 1907-14; Associate Professor of Freehand Drawing, 1914-.

GRACE ALICE DAY

Supervisor of Training and Assistant Professor in the College of Education

Advanced Graduate, State Normal School, Winona, Minnesota, 1899; Teacher, Public Schools, Red Wing, Minnesota, 1899; Minneapolis, Minnesota, 1899-1909; summer student, University of Minnesota, 1900; Instructor, Minnesota State Teachers' Training Schools, 1903, 1904, 1905, 1907, 1909, 1910, 1911; Lecturer, Teachers' Institutes, 1910; Student, Teachers' College, Columbia University, 1909-11; B.S., Columbia University, 1911; B.Di., in Education (Supervision), Teachers' College, Columbia University, 1911; Graduate Student, University of Chicago, June, 1913-Aug., 1913; Supervisor of Training, and Assistant Professor in the College of Education, University of Nevada, 1911-; Instructor in University Summer Schools, 1912; 1914.

ROSALIE POLLOCK

Assistant Professor of Education

B.Di., in Education (Supervision), Teachers' College, Columbia University, 1901; Student in Sociology, Columbia University, summer

session, 1905; B.S., Columbia University, 1909; Student in Sociology, University of Utah, 1909–11; Graduate Student, University of Chicago, summer session, 1912; Institute Lecturer, North Dakota, 1895–1901; Instructor in summer sessions, University of North Dakota, North Dakota Agricultural College, and North Dakota State Normal Schools; Supervisor, Public Schools, Salt Lake City, Utah, 1901–11; Supervisor, Public Schools, Oklahoma City, 1911–13; Instructor, University of Nevada, Summer Session, 1913; Assistant Professor of Education, University of Nevada, 1913–.

WALTER S. PALMER

Assistant Professor of Mining and Metallurgy

B.S., Mining Engineering, University of Nevada, 1905; with the Greene Consolidated Copper Company, Cananea, Mexico, 1905; Mining and Metallurgical practice in the field, summer months, 1906–, Virginia City, Nevada, and Wilkes-Barre, Pennsylvania; E.M., School of Mines, Columbia University, New York, 1907; Mine Surveyor, United States Smelting, Refining and Mining Company, Mammoth, California, 1907–08; Assistant Chemist, Balaklala Consolidated Copper Company, Coram, California, 1908–09; Mining Engineer, U. S. General Land Office, 1909–10; Instructor in Mining and Metallurgy, University of Nevada, 1910–13; Chemist and Assayer, State Mining Laboratory, 1910–; Assistant Professor of Mining and Metallurgy, University of Nevada, 1913–.

201 State Street. Phone 1657-W.

GEORGE DELAFIELD POWERS

Assistant Professor of Mechanical and Electrical Engineering

B.S., University of Nevada, 1907; Testing Engineer, General Electric Company, 1907–08; Electrical Foreman, Southern Pacific Company, 1908–10; Instructor in Mechanical Engineering, University of Nevada, 1910–13; Assistant Professor of Mechanical and Electrical Engineering, University of Nevada, 1913–.

310 Thoma Street.

SILAS EARL ROSS

Assistant Professor of Chemistry

B.S., University of Nevada, 1909; Assistant in Chemistry, University of Nevada, 1909–10; in charge of science work, University High School, 1910–12; Chemist and Inspector, State Food and Drug Department, summers of 1910, 1911, and 1912; Chief Inspector and Deputy Commissioner, State of Nevada, Departments of Foods and

Drugs, and of Weights and Measures, 1912–13; Assistant Professor of Soils and Agricultural Chemistry, University of Nevada, 1913–14; Assistant Professor of Chemistry, 1914–.

1043 North Virginia Street. Phone 1239–J.

ALBERT WILLIAM PRESTON

Assistant Professor of Mechanical Engineering

Machinist, C. R. I. & P. R. R., 1897–1901; Toolmaker, McNeil Machinery Company, 1901; Assistant Machine Foreman, Chicago Great Western Ry., 1902–05; Machinist and Assistant Foreman, Southern Pacific Ry., 1905–10; Student in Engineering, University of Nevada Extension School, 1905–09; Instructor in Mechanical Engineering, University of Nevada, 1910–14; Assistant Professor of Mechanical Engineering, 1914–.

117 West Tenth Street. Phone 1853–R.

PHILIP AUGUSTUS LEHENBAUER

Assistant Professor of Botany and Horticulture

A.B., Westminster College, Fulton, Missouri, 1907; Assistant in Chemistry, Westminster College, 1906–07; Assistant in Biology, Millikin University, 1907–09; A.M., Millikin University, 1909; Instructor in Physiography and Physiology, Summer School, Millikin, 1908; Assistant in Botany, University of Illinois, 1909–10; Instructor, Illinois Biological Station, Havana, Illinois, summer, 1910; Head Assistant in Plant Physiology, University of Illinois, 1910–12; Fellow in Botany, University of Illinois, 1912–14; Ph.D., University of Illinois, 1914 (Plant Physiology, Plant Pathology, and Economic Entomology); Assistant Professor of Botany and Horticulture, University of Nevada, 1914–.

CHARLES HENRY GORMAN

Comptroller

Registrar, University of Nevada, 1911–12; Comptroller, 1912–.

801 North Center Street. Phone 1227–M.

LOUISE MARY SISSA

Registrar

House Mother and Intermediate Teacher, Bishop Whitaker's School for Girls, 1884–92; Principal's Assistant and Secretary, Annie Wright Seminary, Tacoma, Washington, 1893–1901; House Mother, Rowland Hall, Salt Lake City, 1901–05; House Mother, Miss Head's School, Berkeley, California, 1905–06; Assistant Registrar, University of Nevada, 1906–12; Registrar, 1912–.

1033 Ralston Street. Phone 1858–M.

FRANK LEROY PETERSON[1]
Instructor in Irrigation and Farm Mechanics

B.S., Mechanical Engineering, University of Nevada, 1907; Field Assistant in Irrigation Investigations in cooperative work between U. S. Department of Agriculture and State of Nevada, 1909–11; Agent in charge Irrigation Investigations, U. S. Department of Agriculture, 1911–14; Irrigation Engineer, U. S. Department of Agriculture, 1912; Assistant in Irrigation, Nevada Agricultural Experiment Station, 1911–12; Irrigation Engineer, Nevada Agricultural Experiment Station, 1912–14; Instructor in Irrigation, University of Nevada, 1911–12; Member American Society of Agricultural Engineers; Instructor in Irrigation and Farm Mechanics, 1912–14.

VERNER E. SCOTT
Instructor in Dairying

B.S., in Agriculture, University of Wisconsin, 1911; Instructor in Dairy, Poultry, and Animal Husbandry, Dunn County School of Agriculture, Menomonie, Wisconsin, 1911; Instructor in Dairying, University of Nevada, 1912–; Acting Instructor in Animal Husbandry, 1913–14. 606 West Fifth Street. Phone 1704–W.

ELSIE SAMETH
Instructor in Physical Education for Women

A.B., Cornell University, 1909; B.S., Columbia University, 1911; Instructor in Folk Dancing, Cornell University, 1908–09; Physical Director for Women, Cornell University Summer School, 1911, 1912, 1913; Physical Director, Public Schools, Goldfield, Nevada, 1912; Instructor in Physical Education for Women, University of Nevada, January, 1913–. Manzanita Hall. Phone 172.

ARCHIBALD EDWARDS TURNER
Instructor in Public Speaking

A.B., Nebraska Wesleyan University, 1895; Graduate Student and Instructor, Columbia College of Expression, 1897–99; Professor of Public Speaking, Nebraska Wesleyan University, 1899–1910; Instructor in Public Speaking, Columbia College of Expression, summers of 1900, 1903, and 1913; Instructor in Public Speaking, University of Nevada, 1913–.

MARGARET ELIZABETH MACK
Instructor in Biology

Teacher in Public Schools of Lyon County, Nevada, 1889–92; Student, University of Nevada, 1902–03; Teacher and Principal, Public

[1] Resigned December 31, 1913.

Schools, Dayton, Nevada, 1903–08; B.S., University of Nevada, 1910; Teacher, Reno Public Schools, 1910; Instructor in Mathematics, University High School, 1910–12; A.M. (Biology), Columbia University, 1913; Instructor in Biology, University of Nevada, 1913–.

KATHERINE RIEGELHUTH
Instructor in German

A.B., University of Nevada, 1897; Graduate Student, University of California, 1897; Instructor in German, University High School, 1905–08; Instructor in English and German, 1908–12; A.M., Columbia University, 1913; Instructor in German, University of Nevada, 1913–.
543 Lake Street. Phone 1231.

MAUDE A. DENNY
Instructor in Music

Music Student at Lincoln College, 1904–05; Student, Bush Temple Conservatory of Music, Chicago, 1906; Graduate, National Summer School, Chicago, 1907; Supervisor of Public School Music, Lincoln, Illinois, 1907–09; B.M., University of Illinois, 1913; Instructor in Music, University of Nevada, 1913-.

EDWIN EUGENE WILLIAMS
Instructor in Chemistry

B.S., University of Nevada, 1912; Assistant in Chemistry, University of Nevada, 1912–13; Instructor in Chemistry, 1913–14.

AMOS W. ELLIOTT[1]
Instructor in Physical Education for Men

B.S. (Agriculture), University of California, 1912; Instructor in Physical Education for Men, University of Nevada, 1913–14.

HARVEY ELLISON MURDOCK
Acting Instructor in Irrigation and Farm Mechanics

B.S. (M.E.), University of Colorado, 1906; Levelman, Rocky Mountain Ry. Co., 1907; with Maintenance of Way party on Salt Lake Div., S. P. Co., 1907; M.E., University of Colorado, 1908; with Engineering Experiment Station, University of Illinois, 1908–09; C.E., University of Illinois, 1911; Instructor in Theoretical and Applied Mechanics, University of Illinois, 1906–12; Irrigation Engineer, U. S. Department of Agriculture, 1913–; Acting Instructor in Irrigation and Farm Mechanics, University of Nevada, 1914.

[1]Resigned July 1, 1914.

MILES BRYCE KENNEDY

Deputy Food and Drug Commissioner, and Deputy Sealer of Weights and Measures

B.S., Mining Engineering, University of Nevada, 1907; Assistant in Metallurgy, 1907–08; Assistant in Chemistry, 1908–14; Deputy Commissioner, Food and Drug Control, 1913–; Deputy Sealer, Department of Weights and Measures, 1913–.

237 University Terrace. Phone 1719.

SILAS CALVIN FEEMSTER

Assistant in History and Political Science

A.B., Drury College, 1907; Student in Summer Session, State Normal School, Springfield, Missouri, 1907; Professor of Latin and History, York College, Nebraska, 1907–10; Instructor in York College, Summer Session, 1908; Graduate Student, University of Nebraska, 1910–13; Fellow in American History, 1911–12; A.M., 1912 (Feb.); Matriculant for Doctorate in European History, 1912–13; Instructor in History of Education, York College, Summer Session, 1913; Assistant in History and Political Science, University of Nevada, 1913–.

834 North Center Street.

ALEXANDRINE LATOURETTE

Assistant Librarian

A.B., Kalamazoo College, Kalamazoo, Michigan, 1907; Graduate of Pratt Institute Library School, Brooklyn, New York, 1908; Assistant, New York Public Library, 1908; Librarian, State Normal School, Stevens Point, Wisconsin, 1908–10; Librarian, Carnegie Public Library, Iron Mountain, Michigan, 1910–13; Assistant Librarian, University of Nevada, 1913–.

115 West Tenth Street. Phone 1391.

JOHN BLAIR MENARDI, JR.

Assistant in Agronomy

B.S., Agriculture, University of Nevada, 1914; Assistant in Agronomy, 1914–.

444 West Street. Phone 526.

AFFILIATED ORGANIZATIONS

THE STATE MINING LABORATORY

STAFF

ROBERT LEWERS Acting President
JAMES GRAVES SCRUGHAM Dean of Engineering
J CLAUDE JONES Geologist and Mineralogist
WALTER S. PALMER Chemist and Assayer
CAROLYN M. BECKWITH Stenographer

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have them analyzed and assayed without cost. (Secs. 4660–4663, incl., Revised Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals, and that these must have been taken "from within the boundaries of the State of Nevada." This provision is observed as far as is practicable. When persons are known not to be citizens or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be given to the sender, together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores, or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which they came, and all other matters that may be beneficial touching the same."

In compliance with the above section, reports have been rendered and a record book kept. In order to make reports as accurate as possible, it is suggested that the citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning values.

The State Mining Laboratory is under the direction of the College of Engineering.

THE STATE HYGIENIC LABORATORY

STAFF

ROBERT LEWERS Acting President
WINFRED BERDELL MACK Director
MARK F. BOYD Pathologist and Bacteriologist

The State Hygienic Laboratory was organized during 1909, under the provisions of an Act of the Legislature approved March 25, 1909. The object of the laboratory is to provide facilities for the diagnosis of the infectious diseases and for research into the nature, cause, and methods for the control of such diseases. The services of the laboratory staff are available to the physicians, health officers, and health boards of the State for the diagnosis of certain communicable diseases. Advice and assistance will, on request, be rendered the sanitary officials in the control of outbreaks of infection and in securing sanitary supplies of milk and water.

The results of the work of the laboratory are made public from time to time through bulletins, circulars, and annual reports, and will be sent free on request to residents of the State who desire them.

LABORATORY FOR PURE FOOD AND DRUGS

STAFF

ROBERT LEWERS Acting President
SANFORD CROSBY DINSMORE Commissioner
MILES BRYCE KENNEDY Assistant

An Act providing for the inspection and analysis of foods, drugs, and liquors, manufactured or offered for sale within the State, was passed by the 1909 session of the Legislature, and became effective January 1, 1910. The state law is modeled after the National Food and Drugs Act of June 30, 1906, and provides that all rules, regulations, definitions, and decisions proclaimed by the Secretary of Agriculture for the enforcement of the national law shall be adopted by this department in the enforcement of the state law.

With such provisions Nevada receives valuable aid through the federal regulations, and avoids conflict with neighboring States having laws also modeled closely after the national Act. Uniformity in state and national laws, and cooperation among officials is much to be desired, and more can be accomplished under such conditions than by working under laws that are dissimilar or antagonistic to established regu-

lations that have been in vogue in States maintaining food laws for a number of years.

The laws of this State being similar to the national law, obviates the necessity of manufacturers providing special labels to meet any special requirements that otherwise might exist in this State. Often labels are submitted to this department for approval or correction so that they will comply with the Nevada food law.

LABORATORY FOR WEIGHTS AND MEASURES

STAFF

ROBERT LEWERS Acting President
SANFORD CROSBY DINSMORE Sealer
MILES BRYCE KENNEDY Deputy Sealer

An Act concerning and fixing standard weights and measures, and to regulate the sale of commodities or articles of merchandise according to such standards, was passed by the 1911 session of the Legislature and became effective January 1, 1912.

The standard weights and measures adopted by the Government of the United States have been adopted as the legal standard of weights and measures throughout the State of Nevada. With this adoption Nevada receives aid through the federal regulations and promotes uniformity in state and national standards.

THE AGRICULTURAL EXPERIMENT STATION

THE BOARD OF CONTROL

The HON. HOSEA E. REID (1911-1915), Chairman Reno
The HON. CHARLES B. HENDERSON (1911-1915) Elko
The HON. ARTHUR A. CODD (1913-1917) Reno
The HON. JAMES W. O'BRIEN (1913-1915) Sparks
The HON. WALTER E. PRATT (1913-1917) Goldfield

Mr. GEORGE H. TAYLOR, Secretary Reno
Mr. CHARLES H. GORMAN, Comptroller Reno

STAFF

ROBERT LEWERS Acting President
SAMUEL BRADFORD DOTEN Director and Entomologist
CHARLES S. KNIGHT Agronomist, Director of Extension
JAMES EDWARD CHURCH, JR. Meteorologist
PETER FRANDSEN Consulting Biologist
MAXWELL ADAMS Consulting Chemist
WINFRED BERDELL MACK Bacteriologist and Veterinarian
CARL ALFRED JACOBSON Chemist
STERLING PRICE FERGUSSON Associate Meteorologist
FREDERICK WESTON WILSON Consulting Animal Husbandman
SANFORD CROSBY DINSMORE Pure Food and Drug Commissioner, Sealer of Weights and Measures
SILAS E. ROSS Consulting Chemist in Soils
PHILIP AUGUSTUS LEHENBAUER Consulting Botanist and Horticulturist
VERNER E. SCOTT Consulting Dairy Husbandman
MILES BRYCE KENNEDY Deputy Commissioner and Sealer
AUGUST HOLMES Assistant Chemist
GEORGE G. SCHWEIS Assistant in Entomology
JOHN BLAIR MENARDI, JR. Assistant in Agronomy
THEODORE W. CLARK Superintendent of Farm
Mrs. T. W. COWGILL Librarian
Mrs. LOUISE BLANEY Station Secretary

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government

appropriated $15,000 for the support of an Agricultural Experiment Station in each State and Territory in the Union.

The primary object of the Station is the promotion of scientific agriculture by conducting researches in the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese, through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; the economic relation of entomology to agriculture; the relation of climate to agriculture and horticulture; the conservation of snow; the forecasting of frost; the determination of relatively frost-free areas for fruit growing; in fact the solving of all problems pertaining to agriculture which are or may be of importance to the State.

The results of the work of the Station are made public through bulletins and reports which are sent free to all residents of the State who desire them.

AGRICULTURAL EXTENSION

The Division of Agricultural Extension in the College of Agriculture was organized July 1, 1914, under the provisions of the Smith-Lever Act, approved May 8, 1914, whereby the General Government appropriated to each State and Territory in the Union $10,000 annually for the support of agricultural extension.

The work will consist of instruction and practical demonstrations in agriculture and home economics given to persons not attending or resident in the College of Agriculture, and imparting to such persons, in the several communities, information on agricultural subjects through field demonstrations, publications, and otherwise. This work will be carried on in such a manner as may be mutually agreed upon by the Secretary of Agriculture and the College of Agriculture in the University of Nevada. The Division of Extension is a part of and under the direction of the College of Agriculture.

STAFF

ROBERT LEWERS Acting President
CHARLES S. KNIGHT Director
KATE BARDENWERPER Home Economics
V. E. SCOTT Dairy Husbandry
PHILIP A. LEHENBAUER Horticulture
FREDERICK W. WILSON Animal Husbandry
GEORGE G. SCHWEIS Entomology
SILAS E. ROSS Chemistry
LOUISE BLANEY Secretary

ASSOCIATION OF UNIVERSITY ALUMNI

The Alumni Association was organized June, 1894. Its object is to promote union and good fellowship among the Alumni, and to advance and protect the interests of the University of Nevada. The dues of the Association are $1 a year for ten years or a life membership for $10. The annual meeting is held on Monday of Commencement Week.

OFFICERS, 1914–15

President SILAS E. ROSS,'09
Vice-President MELVIN E. JEPSON,'11
Secretary-Treasurer Mrs. LOUISE BLANEY,'95

EXECUTIVE COMMITTEE

THE OFFICERS KATHERINE RIEGELHUTH,'97
JOHN W. WRIGHT,'05

ASSOCIATION OF NORMAL ALUMNI

President Mrs. MARY SNOW THURTELL,'90
Vice-President IRENE V. BROWN,'09
Secretary-Treasurer Mrs. HATTIE RHODES PIERSON,'90

UNIVERSITY ADDRESSES FOR THE YEAR 1913-1914

1913

September 5—"Success," Dr. E. L. House.

September 23—"The Profession of the Actor, the National Theater, and selections from Shakespeare," Charles B. Hanford of Washington, D. C., the Shakespearian actor, chosen by the British Government to exhibit in the United States pictures of Scott's Polar Expedition.

October 2—"Gladstone," Reverend Charles F. Aked of San Francisco.

October 3—"Method versus Personality in the Teaching Profession," Reverend Charles F. Aked of San Francisco.

October 17—"A Look Into the Future from a Physician's Viewpoint," Dr. M. R. Walker.

October 27—"A Sagebrush Parson in Nevada Thirty Years Ago," Reverend George Wharton James of Pasadena, California.

1914

January 26 and 27—INDUSTRIAL SAFETY CONFERENCE:

"The Safety First Movement in Nevada," John J. Mullin, Secretary of Nevada Industrial Commission.

"Safety First on the Oregon Short Line," L. E. Abbott, Safety Commissioner, Oregon Short Line.

"Safety First in Practice," Frank Ingram, Secretary of the Brotherhood of Locomotive Firemen.

"Safety Regulations for Electric-Power Companies," W. K. Freudenberger, Chief Engineer, State Public Service Commission. Discussion by delegates to the Conference.

"Safety First in Mining," Thomas M. Fagan, President of Tonopah Miners' Union.

"Accident Prevention in Mining," Edward Ryan, State Mine Inspector, assisted in demonstrations by the Mining Department of the University of Nevada.

"First Aid to the Injured," Peter Frandsen, Professor of Biology, University of Nevada.

"Safety First at the Nevada Consolidated Copper Company," Lindsay Duncan, Mechanical Engineer of the Nevada Consolidated Copper Company and Steptoe Valley Smelting and Mining Company.

"Impressions of a Visitor from Nevada who attended the Safety Conference under the auspices of the American Museum of Safety held in New York City, December 10, 11, and 12, 1913," Reverend Lloyd B. Thomas, Carson City, Nevada.

"Industrial Education," John Edwards Bray, State Superintendent of Public Instruction.

"The Apprentice School System of the Southern Pacific," Thomas G. Gray, Sacramento Shops.

"Mechanical Drawing for Apprentices," H. S. Gillette, West Oakland Shops.

"A Proposed System for Railway Apprentice Instruction," A. W. Preston, Shop Superintendent, University of Nevada.

"The Development of the Electrical Manufacturing Industry," R. M. Alvord, Manager, Supply Department, General Electric Company.

"Electric Irrigation Pumping," H. F. McPhail, University Engineers' Club.

"Electric Headlights," J. G. Scrugham, Professor of Electrical and Mechanical Engineering. General discussion by delegates to the Conference.

February 12—"Abraham Lincoln and Higher Education," Bishop Edwin Holt Hughes of San Francisco.

February 20—"The Value of Thoroughness," Colonel Harris Weinstock of San Francisco.

February 23—"Woman Suffrage," Mr. and Mrs. James Lee Laidlaw of New York City.

March 4—Dedication of Library Building. Brief and informal addresses were given by Dr. H. E. Reid, Chairman of the Board of Regents, Regent Charles B. Henderson for the Board of Regents, Librarian Joseph D. Layman for the Faculty, Mr. J. I. Cazier for the Associated Students, Honorable R. M. Price for the Board of Visitors, and Regent Walter E. Pratt for the Board of Regents.

March 9—Dedication of Dairy Building. Dedicatory address by Dr. H. E. Reid, Chairman of the Board of Regents; acceptance by Mr. V. E. Scott, Instructor in Dairying.

March 11—"How Can a Young Man Become a Farmer?" Dean Thomas F. Hunt of the University of California, Berkeley, California.

March 12—"Soils and Moisture," Dr. Frank S. Harris of the Agricultural Experiment Station at Logan, Utah.

April 22—"Discharge of Electricity Through Gases," Dr. L. W. Hartman, Professor of Physics, University of Nevada.
May 31—"That ye may be bold in the day of judgment," Baccalaureate Sermon by Reverend Charles F. Aked of San Francisco.
June 3—Commencement Address by George Francis James, Dean of the College of Education, University of Minnesota. Scholarship address by Dr. H. E. Reid, Chairman of the Board of Regents.

FACULTY SCIENCE CLUB

Papers Read During 1914

January 20, 1914—Notes on a Recent Trip in Southern Nevada, Prof. D. B. Huntley.
February 3, 1914—Recent Advances in Radioactivity, Prof. C. A. Jacobson.
February 10, 1914—The Photography of Sound Waves, Prof. L. W. Hartman.
February 17, 1914—The Recent Banking Legislation, Prof. Romanzo Adams.
February 24, 1914—The Origin of the Tufas of Lake Lahontan, Prof. J. C. Jones.
March 3, 1914—Pathogenic Fungi, Dr. O. P. Johnstone.
March 10, 1914—The Ionic Theory of Solutions, Mr. August Holmes.
March 17, 1914—The Laws of Heredity, Prof. Peter Frandsen.
March 24, 1914—Recent Work in Meteorology, Prof. Fergusson.
March 31, 1914—Tuberculosis in Cattle, Dr. W. B. Mack.
April 7, 1914—The Structure of Protoplasm, Miss Margaret E. Mack.
April 14, 1914—Studies with School Children, Prof. George Ordahl.
April 21, 1914—The Fourth Dimension, Prof. Chas. Haseman.
April 28, 1914—Dams and Dam Failures, Prof. H. P. Boardman.
May 4, 1914—The Origin of the English Language, Prof. H. W. Hill.
May 18, 1914—The Field of Work of the Experiment Station, Director S. B. Doten.
May 25, 1914—The Reno Water Supply, Prof. Miles B. Kennedy.

LIBERAL ARTS CLUB

MEETINGS HELD IN 1914

January 29—The Prose Romances of William Morris, Prof. A. E. Hill.

March 26—Nineteenth-Century Economic Development and Twentieth-Century Educational Tendencies, Prof. Romanzo Adams.

April 30—Some Impressions of Oxford, Mr. Scott Unsworth.

May 16—The Doctrine of Formal Discipline, or General Intelligence, Prof. George Ordahl.

FARMERS' WEEK

Monday, March 9. PROGRAM

1:30 to 2:15 P. M.—Address, Dr. J. E. Stubbs, President of University. Address, Dr. H. E. Reid, Chairman, Board of Regents.

2:15 to 4:00 P. M.—Examination and Judging of Grains, Prof. Chas. S. Knight.

Tuesday, March 10.

8:15 to 9:00 A. M.—The Relationships Between Experiment Station, College, and Extension Work, Prof. S. B. Doten, Director of Experiment Station.

9:00 to 11:00 A. M.—Judging Beef Animals, Mr. Carl E. Milentz.

11:00 to 11:45 A. M.—Home Sanitation and Hygiene, Dr. O. P. Johnstone.

1:30 to 2:15 P. M.—Some Poisonous Plants and their Relation to the Farmer, Dr. C. A. Jacobson.

2:15 to 3:15 P. M.—Demonstration; Problems in Soil Fertility, Mr. Silas E. Ross.

3:15 to 4:15 P. M.—How Meteorology Affects the Nevada Farmer, Prof. S. P. Fergusson.

7:30 P. M.—Illustrations of College Activities—University Gymnasium.

Wednesday, March 11.

8:15 to 9:00 A. M.—The Importance of Eelworm Regulations, Prof. Peter Frandsen.

9:00 to 11:00 A. M.—Dairy Demonstration; Buttermaking, Mr. Verner E. Scott and Mr. Carl Milentz.

11:00 to 11:45 A. M.—Home Sanitation and Hygiene, Dr. O. P. Johnstone.

1:30 to 2:15 P. M.—The Value of Home Economics in a College Curriculum, Asst. Prof. Kate Bardenwerper.

2:15 to 4:00 P. M.—Examination and Judging of Grains, Prof. Chas. S. Knight.

7:30 P. M.—Address by Dean Thomas Forsythe Hunt of the University of California.

Thursday, March 12.

8:15 to 9:00 A. M.—The Centrifugal Pump and Other Mechanical Appliances, Prof. Jas. G. Scrugham.

9:00 to 9:45 A. M.—Late Frosts; Their Effects on Fruits and Means of Preventing Injury, Dr. Jas. E. Church.

9:45 to 11:00 A. M.—Judging Dairy Cattle, Mr. Carl Milentz.

11:00 to 11:45 A. M.—Home Sanitation and Hygiene, Dr. O. P. Johnstone.

1:30 to 2:30 P. M.—Problems in Food and Drug Control, Prof. Sanford C. Dinsmore.

2:30 to 4:00 P. M.—(a) Dairy Demonstration; Cheesemaking, Mr. Verner E. Scott.

(b) Demonstration; How to Make Parker House Rolls, Asst. Prof. Kate Bardenwerper.

7:30 P. M.—Address by Dr. Frank S. Harris, Director of School of Agricultural Engineering, Logan, Utah.

Friday, March 13.

8:15 to 12:00 A. M.—Lecture or Demonstration on Tuberculosis in Farm Animals, Dr. Winfred B. Mack.

1:30 to 2:15 P. M.—The New Banking Law, Dr. Romanzo Adams.

2:15 to 3:00 P. M.—Legal Standards and Tests of Dairy Products, Mr. Silas E. Ross.

3:00 to 4:00 P. M.—Demonstration; Gasoline-Electric Farm-Lighting System. Given under the auspices of the Mechanical and Electrical Engineering School.

8:00 to 11:00 P. M.—Reception at Home of the President.

Saturday, March 14.

8:15 to 9:00 A. M.—Agricultural Conditions in Europe, Dr. J. E. Stubbs.

9:00 A. M.—Parade of University Live Stock.

ORGANIZATION AND ADMINISTRATION

FOUNDATION

The University of Nevada is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural, and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko, by a law approved March 7, 1873, but was moved to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University began with the academic year 1886–87.

The State Normal School was authorized by an Act of the Legislature approved February 7, 1887; and was established and opened for students in September, 1887.

COLLEGES AND SCHOOLS

The University maintains the following Colleges and Schools, which aim to meet the best ideals of modern university life and training:

I. THE COLLEGE OF ARTS AND SCIENCE.

II. THE COLLEGE OF AGRICULTURE:
 1. The School of Agriculture.
 2. The School of Home Economics.
 3. Agricultural Extension.

III. THE COLLEGE OF ENGINEERING:
 1. The Mackay School of Mines.
 2. The School of Mechanical and Electrical Engineering.
 3. The School of Civil Engineering.

IV. THE COLLEGE OF EDUCATION.

V. SUMMER SESSION FOR TEACHERS.

GOVERNMENT

Under the Constitution and laws of the State of Nevada, the government of the University is vested in a Board of Regents, consisting of five members elected by the people. The immediate control is vested by law in the President under the direction of the Board of Regents. The administration is directed by the administrative officers with the approval of the Board of Regents.

THE PRESIDENT

The President is the executive officer of the Board of Regents and of the Faculty of the University.

He shall be ex officio member of all standing committees.

He shall be ex officio head of the faculty or faculties of any schools which may be organized by the Board of Regents.

He shall be the official medium of communication between the teaching force of the University and the Board of Regents, and between the students of the University and the Board of Regents.

He shall, in consultation with the Deans and with the approval of the Board of Regents, appoint the standing committees and shall name the chairmen of such committees.

THE VICE-PRESIDENT

The Vice-President shall perform the functions of the President in his absence and such other duties of the University as may be assigned by the President and receive the approval of the Board of Regents, and shall be a member, ex officio, of all committees.

THE DEANS

The Dean is the executive officer of his College in departmental and business relations, and in these matters is directly responsible to the President of the University. He shall, in consultation with the heads of departments, prepare the annual budget for his College and submit it in detail to the President and the Comptroller for further action. He shall take the initiative in recommendations regarding heads of departments in his College, but shall receive and transmit to the President recommendations by the several heads of departments regarding other members of their staff of instruction. He shall be the official medium for all formal communications from his College to the President of the University.

THE REGISTRAR

The Registrar shall be responsible for the care of the records of the students.

He shall be the official medium of communication between the students and the Faculty Committees.

He shall prepare, subject to the approval of the President and administrative officers, all official publications of the University such as the Register, Bulletins, Directory, etc.

He shall have control of such clerical assistants as are provided for the preparation and care of the records of the academic work of the University, and shall conduct such a bureau of information as is necessary for the academic work of the University.

He shall be the Secretary of the several Faculties and shall keep a record of their proceedings.

THE COMPTROLLER

The Comptroller is the accountant of the University; it is his duty to receive all drafts, checks, and moneys, whether sent to the President or to the Secretary of the Board of Regents, or to any employee of the University, or to any other official, or to any bank; and these shall be turned over to him for endorsement and deposit. He shall have charge of the bookkeeping and accounting of the University. He shall also be the custodian of all deeds, abstracts, and similar legal papers of the University.

THE COLLEGE FACULTIES

The Faculty of each College is under the general supervision of a Dean. Its membership is made up of all the staff of instruction in the College, but no one below the rank of Assistant Professor shall have the right to vote in its meetings. All such college matters as courses of study, requirements for admission or graduation, recommendations for award of degrees, etc., shall be initiated and passed upon by the College Faculty affected.

THE UNIVERSITY FACULTY

The University Faculty shall consist of all the College Faculties and may be called together by the President to consider any questions of general interest to the University.

STANDING COMMITTEES OF THE UNIVERSITY FACULTY

The standing committees shall be as follows:

1. Student Affairs for Men.
2. Student Affairs for Women.
3. Athletics.
4. Public Exercises.
5. Honors and Scholarships.
6. Public Health.
7. Registration and Delinquent Scholarship.
8. Military Affairs.
9. Admission and Advanced Standing.
10. Schedules and Examinations.
11. University Publications.
12. Library.
13. Graduate Courses.
14. Appointment Committee.

Standing committees shall be appointed annually by the President, subject to the approval of the Board of Regents, and they shall enter upon their duties the first of July of each year.

SPECIAL COMMITTEES

Special committees may be appointed by the President of the University, to which the University Faculty may assign the consideration of any matter within its jurisdiction.

ADVANTAGES AND EQUIPMENT

Reno, the seat of the University, is a thriving community of twelve thousand inhabitants. It is situated in the beautiful Truckee Valley at the junction of three railroads, namely, the Southern Pacific, a trunk line between the east and west; the Virginia and Truckee Railway, and the Nevada-California-Oregon Railway. The Sierra Nevada Mountains on the west, with their pine forests and the majestic Mt. Rose rising to a height of 10,800 feet and covered with snow most of the year, the brown Virginia Range on the east, and the green carpet of the valley, all unite to make the site of the University a delightful one. The pure air and many days of sunshine give the town an enviable reputation for health and beauty. The numerous churches are cordially thrown open to the students, and the well-equipped building of the Young Men's Christian Association of Reno, erected at a cost of $75,000, gives opportunity for athletics and social activities.

ENDOWMENT AND SUPPORT

The University is supported by federal and state appropriations. The Federal Government under the Morrill Act gives the University $50,000 a year for instruction purposes, and $30,000 a year for research work under the Hatch and Adams funds. Beginning July 1, 1914, an additional federal appropriation of $10,000 is available for extension work in agriculture. The income from the State includes the interest on two land-grant funds—the 90,000-Acre Grant and 72 Section Grant—yielding an annual income of about $6,000, and an eight-cent tax on property which brings an annual return of approximately $80,000.

In addition the State makes direct appropriations for such buildings as may be needed.

The Mackay School of Mines has an endowment given by Mrs. John W. Mackay and Mr. Clarence H. Mackay of $150,000, yielding annually $6,000.

BUILDINGS AND GROUNDS

The University Campus has an area of fifty-three acres and is beautifully located on an eminence overlooking the city. The academic buildings center upon a turfed quadrangle; broad walks and drives traverse the grounds. The natural

advantages of the site lend well to landscape embellishment, and during the past year much has been done toward beautifying the grounds.

The following brief descriptions will give some idea of the principal buildings and the purposes for which they are used:

CHEMISTRY BUILDING—The Chemistry Building is a two-story gray stone building standing on the west side of the Quadrangle. On the first floor are found the inorganic, qualitative, and quantitative laboratories, a balance-room, stockroom, and the professor's private laboratory, which is equipped for electrochemical work. The qualitative laboratory accommodates sixty-five students, and the quantitative, which is also used as an organic laboratory, accommodates thirty-six students. Both laboratories are supplied with hoods, gas, water, compressed air, steam-evaporating pans, and direct-current electricity. The chemical laboratory of the Agricultural Experiment Station occupies the south half of the second floor. This laboratory has been wholly remodeled and equipped for organic research. It contains four working desks, supplied with gas, water, and steam, commodious hoods, motor-driven centrifuge, vacuum and compressed-air systems, electric ovens, etc. Adjoining this laboratory is an office for the research chemist. The second floor also contains a lecture-room accommodating seventy persons, two stockrooms, an office, and a department library. The basement is divided into two compartments, one being used as a furnace- and combustion-room, the other as an acid-room. All the laboratories are heated from the central heating plant.

DAIRY BUILDING—The Dairy Building is a two-story brick and stone building, situated east of the Mechanical Building. On the first floor are laboratories for butter and ice-cream making, a demonstration-room for hand separators, a cheese-curing room, and a refrigeration-room. The second story contains the lecture-room, testing laboratory, lockers for students, office, and laboratory for cheese making. The equipment is of the latest design, with facilities for instruction in all branches of dairy manufacture.

DINING HALL—The Dining Hall is a one-story brick building on the west side of the Campus. It is conveniently equipped for the accommodation of one hundred and fifty students.

ELECTRICAL BUILDING—The Electrical Building is situated just north of the Mechanical Building. This is a handsome structure of brick, with stone facings and trimmings. The



UNIVERSITY GATES.

HATCH STATION.

CHEMISTRY BUILDING.

HOSPITAL.

DAIRY BUILDING.

LIBRARY.

ELECTRICAL BUILDING..

LINCOLN HALL..



MANZANITA HALL DINING HALL AND UNIVERSITY LAKE.



MECHANICAL BUILDING.



MACKAY MINING BUILDING AND GYMNASIUM.



MORRILL HALL.



MACKAY BLEACHERS AND COLONNADE.



PHYSICS BUILDING.



MACKAY TRAINING QUARTERS.



STEWART HALL.

spacious laboratories are completely equipped with the most modern machinery and appliances for the study of electrical, mechanical, and civil engineering. On the first floor are located the lecture-rooms and the electrical, gas, and steam engineering laboratories. The second floor contains the library, drafting-rooms, and fuel-testing laboratory.

GREENHOUSE—A working greenhouse is on the east side of the Campus. It is used by the Departments of Biology, Botany, and Horticulture, and also for the study of plant industry and the growing of plants.

GYMNASIUM—The Gymnasium is a brick building one hundred and twenty feet long and sixty feet wide. The assembly hall is one hundred feet by sixty feet, and is used for general University purposes. The building is specially devoted to the use of the young women's classes in Physical Education, and is equipped with shower baths, dressing-rooms, etc., for the use of that department.

HATCH STATION—Hatch Station is set aside almost wholly for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the office of the Director of the Station, the Departments of Agronomy and Irrigation, Entomology, and the Station Library. The second floor of Hatch Station is given to the Departments of Biology, Veterinary Science, Bacteriology, and the State Hygienic Laboratory. The third floor is occupied as a general Biological Laboratory.

HEATING PLANT—A central heating plant supplies most of the buildings on the Campus with heat. It consists of two large boilers, pumps, engines, motors, etc., and is operated in connection with the mechanical engineering laboratories.

HOSPITAL—The University Hospital is situated between the Gymnasium and Lincoln Hall. This is a one-story building and contains six rooms. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where the food for the patients is prepared. A matron is in charge of the Hospital. Students may have any physician whom they prefer.

LIBRARY—The Library Building is situated on the west side of the Quadrangle; it is constructed of brick and stone in conformity with the architecture of the other buildings.

LINCOLN HALL—Lincoln Hall, the men's dormitory, is a three-story brick building, built after the plan of such halls in use in the larger eastern colleges, and affords a comfortable home for one hundred young men. The building is heated from the central heating plant, and is furnished with shower baths, lavatories, etc. Students are expected to furnish their bedding and linen.

MACKAY MINING BUILDING—The Mackay Mining Building, the gift of Clarence H. Mackay, houses the Departments of Mining and Metallurgy, and of Geology and Mineralogy. It is a commodious two-story structure of the colonial style with two single-story wings in the rear. A court and a library occupy the space between the wings. The first floor contains the geological lecture-room, office, and petrographic laboratory; the geological and mining library; the geological and mining museum; the weighing-room, assaying laboratory, and metallurgical and mining laboratory. The second floor contains the mineralogical and research laboratories, drafting-room, mining lecture-room, and offices.

MANZANITA HALL—Manzanita Hall, the girl's dormitory, is a large brick building with granite facings. It is modern in style and equipment, is steam-heated throughout, and provides an attractive and comfortable home for about seventy-five girls. The rooms are single and in suites of bedroom and study. The bedroom contains two single beds, two attractive dressers of oak or birdseye maple, a small table, and chairs. Each bedroom has two large closets. The study has a bookcase, a big leather-covered study table, and comfortable chairs. There are a few suites of three rooms, with two big bedrooms for four girls, and some with one large and one small room for three girls. The woodwork in all the rooms is stained dark-brown, and the rooms are a lighter, but subdued, shade of the same color, toning in softly with the wood, making an admirable background for pictures and college pennants. There is a large recreation-room, where the girls read and talk, play games, dance, and sing, and a well-appointed drawing-room, where guests are received. The floors throughout the building are of maple.

MECHANICAL BUILDING—The Mechanical Building is on the east side of the Quadrangle; the ground floor contains the machine shop, the blacksmith shop and the boiler-room. The machine shop is furnished with screw-cutting lathes, a

polishing lathe, a shaper, a universal milling machine, a universal cutter grinder, bench vises, wet and dry emery wheels, and a toolroom equipped with small machine tools and experimental apparatus for the use of shop students. The blacksmith shop has forges and the necessary tools. The second floor accommodates the wood-working shop. This shop is fitted up with a power jig saw, a band saw, a universal wood-working machine, wood lathes, and a universal trimmer. There are twenty-four benches and an equal number of lockers. Each locker contains a set of hand tools.

MORRILL HALL—Morrill Hall is a three-story brick building with a large basement. The first floor is occupied by the administrative offices of the President and of the Board of Regents, and the Department of Mathematics. The Departments of English and Ancient Languages occupy the second floor, and the Department of Law and Municipal Accounting and Department of Meteorology and Climatology are on the third floor. The basement will be arranged as an armory.

PHYSICS BUILDING—The Physics Building, which is in the main devoted to the Department of Physics, is a substantial two-story brick building. On the first floor are the balance-room, the darkrooms, the storage battery-room, the shop, and the laboratories. A photometer bar occupies the larger dark-room. The storage battery-room is wired for seventy cells and is provided with a switchboard adapted for either charging or discharging the batteries. The laboratories are fitted up with high-grade apparatus of modern type. The electrical laboratory is supplied with the best forms of American and German instruments, such as galvanometers, standard resistances, standard condensers, standard Weston and Carhart-Clark cells, resistance boxes, Wheatstone bridges, voltmeters, ammeters, etc. The apparatus used for heat and sound is the best obtainable. For work in light, lenses and mirrors to be used in measuring focal lengths, gratings to be used in measuring the wave-length of light, a ruling engine to be used in making gratings, refractometers, spectrometers, and prisms to be used in determining the indices of refraction, are all available for student use. The shop contains a lathe and a full set of tools for all kinds of metal work. The second floor contains the lecture-room with a seating capacity of eighty persons, the apparatus-rooms, and the offices. The lecture-room is equipped with projection screens, wall galvanometers, a switchboard provided with direct and alternat-

ing current terminals, a large static machine, and a lecture-room table provided with gas and water mains. The Department of Art and Freehand Drawing occupies one room on the first floor and the laboratory for the Pure Food and Drugs Department and for the Department of Weights and Measures occupies another.

PRESIDENT'S HOUSE—The President's house is situated on the southeast corner of the Campus. It is colonial in style, and is a fine, commodious house, an ornament to the University.

STEWART HALL—Stewart Hall is a three-story and basement brick building. In the basement are the rooms of the Department of Home Economics and the rest-room for women. The Departments of History, Modern Languages, and German occupy the first floor. The second floor is occupied by the Departments of Economics and Sociology, Education, Latin, and by the seed laboratory and classroom of the Agronomist. The third floor is occupied by the Department of Botany and Horticulture.

THE MACKAY FIELD

The natural amphitheater on the Campus, which had been leased to the University for a number of years by the late Regent Evans, was purchased for the University by Mr. Clarence H. Mackay and provision made for its improvement. In order to make room for other branches of athletics, such as basket-ball and tennis, the Nevada Legislature of 1909 made provision for the purchase of additional land to the south of the old field, so that now about ten acres of land is being used for athletic purposes. The improvements donated by Mr. Mackay include a Training Quarters Building, situated on the east side of the field. This building has showers, baths, locker and dressing-rooms, a committee-room, and a lounging-room. Directly opposite to this on the west bank are the bleachers and colonnade. The natural slope of the bank has been utilized so that the field closely resembles the stadium used at the ancient Olympic games. There are seventeen tiers of concrete, with a colonnade for a covered grandstand in the rear. The seating capacity is about two thousand.

Situated between these structures is a full-sized Rugby football field, surrounded by a quarter-mile track which has an arm extended to make provision for the 220-yard events.

LIBRARIES

GENERAL LIBRARY

The University Library contains twenty-five thousand five hundred bound volumes and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works and reference volumes of various kinds. The books are catalogued according to the Dewey Decimal Classification System.

The reading-room is supplied with daily and weekly newspapers and with many of the best periodicals. The list includes about three hundred subscriptions to the leading cultural, scientific, and technical magazines.

The Library is open from 7:50 a. m. to 4:50 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. During summer sessions and vacations, special hours are announced.

To the general public is extended the use of the Library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students. Borrowers residing outside of Reno are asked to pay the necessary postage or expressage on the books loaned to them.

AGRICULTURAL EXPERIMENT STATION LIBRARY

The Agricultural Experiment Station Library, containing about twenty-five hundred bound volumes and a large number of pamphlets, is in the northern wing of Hatch Station. These volumes and pamphlets may be classified broadly as follows: Bulletins and Reports of the Experiment Stations of the various States, publications of the United States Department of Agriculture, and general works on agriculture and the related sciences. Many current agricultural periodicals are on the tables in the reading-room. The library is catalogued and classified, and suited for ready reference. It is open daily, and, while intended primarily for the use of the Station Staff, it is also accessible to the public.

MINING LIBRARY

All reference books, text-books, technical journals, and works pertaining to geology and mineralogy, mining and metallurgy, are concentrated in one large study-room which is conveniently

located upon the ground floor of the Mackay Mining Building. This library is open at all times during the sessions.

OTHER DEPARTMENTAL LIBRARIES

Additional departmental libraries are maintained for biology, chemistry, bacteriology, veterinary science, and home economics.

TRAVELING LIBRARIES

The University has fifteen traveling libraries for the use of Nevadans outside of Reno. Numbers 1 and 2 have twenty-five books each, the others have fifty books apiece. So far as practicable these are loaned to schools or communities that will pay transportation charges. The "travelers" may remain three months or longer in a place. Then they return to the University Library, are checked up and made ready to loan again. The University will continue this in a modest way until the work can be done better by others. The University requires a deposit of five dollars on each "traveler."

CITY AND STATE LIBRARIES

Besides the University libraries, members of the University have the facilities of the Reno Free Library, and of the State Public Library, which is located at Carson City.

LABORATORIES

Physical Laboratory—The work of the Physical Laboratory is of four distinct kinds, each with its separate rooms and its own special equipment. The General Laboratory contains, besides a shop, a Freshman and a Sophomore Laboratory for work in sound, mechanics, heat, light, magnetism, and electricity. The equipment of these laboratories consists of modern apparatus of approved design and substantial construction, suited for accurate physical measurements. The apparatus for the most important exercises has been duplicated, so that at present individual laboratory work is insisted upon for at least half of the work. Aside from the main laboratories there is a separate room for experiments in heat; a weighing-room, containing four Becker balances mounted on piers; a darkroom; and a department library and reading-room, which is also available for student use while writing up the laboratory exercises. The department shop contains a motor-driven lathe, with taper attachment, change gears for cutting metric threads, and all other accessories, hand tools for wood and metal work, including metric taps and dies, a small circular

and linear dividing engine, and a direct-current dynamo with two armatures, furnishing current at various voltages. All of the laboratories are supplied with water, gas, and electricity.

Laboratory for Quantitative Analysis—This laboratory will accommodate thirty-six students. It is equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance-room containing six sets of balances, and a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

Laboratory for Qualitative Analysis—This laboratory will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas, and fume closets.

Experiment Station Chemical Laboratory—In this laboratory students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

General Biological Laboratory—The biological laboratory has thirty-five laboratory tables, each of which is provided with a microscope, reagent lockers, and six drawers fitted with combination locks. The tables have plate-glass tops, resting on rubber mats, so that they cannot be injured by stains or chemicals. In addition to these are a few operating tables with zinc tops, designed for operating demonstrations and dissections. The general equipment and supplies are kept in wall cases and cabinets, made of quarter-sawed oak and similar to the tables in design. The department now has thirty-seven first-class combined microscopes, four of which are equipped with high-power lenses and all other accessories for the most delicate and precise microscopical work. Among the larger and more expensive instruments are an electric incubator, a Lillie paraffine oven, an electric centrifuge and sterilizer. An important adjunct to both the class and laboratory work is a combined microscopic and lantern-projection apparatus, which enables the instructor to project microscopic objects as well as photographic illustrations, magnifying up to 3,000 diameters, upon the screen, where they may be observed by the whole class at one time.

Histological and Embryological Laboratory—This laboratory is equipped with all the necessary apparatus for doing general or research work in histology and embryology.

Bacteriological Laboratory—This laboratory is fitted up with apparatus for research in pathology and bacteriology. It is used chiefly for Experiment Station work, and for the work of the State Hygienic Laboratory, but is available for demonstration purposes for students taking elementary bacteriology, and can accommodate a few students who desire to do more advanced work.

Agricultural Botanical Laboratory—This laboratory, located on the third floor of Stewart Hall, is equipped with a collection of economic seeds, charts, cones, samples of native woods, and other illustrative material. The herbarium of the Experiment Station is located in this laboratory, and is described elsewhere.

Entomological Laboratory—This is for the use of the Station Entomologist and agricultural students or others doing special work in entomology. It contains also the Photographic Laboratory of the Experiment Station.

Psychological Laboratory—This laboratory is located on the first floor of Stewart Hall, and is equipped with apparatus for class demonstration, experiments, and original research work in psychology and education.

Geological and Mineralogical Laboratories—The Departments of Geology and Mineralogy are provided with reference collections illustrating the minerals, rocks, and fossils, and with class collections for study and determination. The Mineralogical Laboratory is arranged, for the present, for the accommodation of single sections of forty students. There is, in addition, a laboratory fitted up for microscopic work, equipped with petrographical microscopes and the necessary accessories. It has also a set of mineral thin sections cut in definite direction, and a collection of rock sections with many representatives of each of the chief types, together with many sections illustrating special types. A separate grinding-room is provided with apparatus for making thin sections of rocks and minerals. Blowpipe and other chemical work is also provided for.

A lantern with a growing collection of slides furnishes additional illustrative material for lecture work.

Chemical Laboratory of the Mackay School of Mines—The Chemical Laboratory is fully equipped with the usual desks, hoods, hot-plates and air-baths. Each desk is provided with gas, compressed air, and electricity. Steam connections are

provided for drying-coils and still. Electric air-baths and drying pans are provided for overnight work. A small electric-driven, five-jar Abbe mill is in use for fine grinding tests. Four four-gallon slime agitators, driven by a small electric motor, are used for slime tests. A direct-connected electric-driven exhaust fan draws the air from the hood in the parting-room and from this laboratory. A complete electrolytic outfit for lead, copper, and other determinations has been installed. This laboratory will accommodate sixteen students.

Weighing-Room—Connected with both the Chemical Laboratory and the parting-room is the weighing-room. Substantial piers carry the balances. Both chemical and bead balances for assaying work are placed in this room. The equipment consists of two analytical balances and eight bead balances. Different makes of balances are in use, such as the Becker, the Ainsworth, the Keller, the Oertling, and the Staudinger.

Parting-Room—The cleaning of beads, parting, and ignitions are provided for in a separate room convenient to the weighing-room and the Assaying Laboratory. The room is equipped with cement tables, a hood, and a set of bullion rolls.

Assaying Laboratory—The preparation of crucible charges and all furnace work is done in the Assaying Laboratory. This laboratory is equipped with six Thompson pulp scales, three double-muffle soft-coal furnaces, three large oil fusion furnaces, four small oil-fired muffles, two coke muffle furnaces, and one coke fusion furnace. Crude oil and distillate are used for the oil furnaces, compressed air being used to spray the oil. The laboratory will accommodate twenty students.

Metallurgical and Mining Laboratory — The metallurgical equipment includes the following machinery, all of commercial size: a three-stamp battery and feeder, amalgamating plates on steel table, a four-foot Union concentrator, a Wilfley concentrating table, a two-compartment jig, classifiers, and sizing cones, a 4x8 rock-breaker of the Sturtevant type, 10x14 crushing rolls, a 2x6 Columbian separator, an automatic sampler, belt elevators, a cyanide plant of one-ton capacity, a 3x8 roasting furnace, an eighteen-inch amalgamating pan, a sample crusher, and a sample grinder. A tube mill of 150 pounds capacity and a small Puchuca agitator are provided for slime tests.

The mining machinery equipment consists of an Ingersoll-Sargent drill and air compressor with a complete tool-sharpening kit and set of drills.

The equipment of the laboratory is so arranged as to admit of the following processes being carried out on a working scale: dry crushing and automatic sampling of an ore to any mesh coarser than a 40 screen; coarse and fine concentrations of an ore after crushing with either stamp battery or rolls; wet crushing, plate amalgamation, and concentration of gold ores; cyanide treatment of either gold or silver ores after stamping or from the rolls or the tube mill—the roasting furnace enabling the ores to be given a chloridizing or an oxidizing roasting before treatment in the vats; and, finally, pan amalgamation of silver ores. All the machines are so arranged as to admit of independent working or working in conjunction. A 15-hp. and a 5-hp. induction motor drive all the machinery through separate line shafts.

Steam and Gas Laboratory—The equipment is very complete; it consists of a Corliss engine, three automatic cut-off high speed engines, a Curtis turbine, a De Laval turbine, a three-cylinder Standard gas engine, two Fairbanks-Morse gas engines, a crude oil engine, an International Harvester Company engine, an Alden dynamometer, a Sargent gas calorimeter, engine indicators, calorimeters, gages and gage testers, pyrometers, gas analysis outfits, and numerous other pieces of apparatus essential in making tests and investigations in steam and gas machinery.

Electrical Laboratory—Through the liberality of the State Legislature the equipment of the Electrical Engineering Laboratory is now one of the best in the country. Machines of practically all standard types are available for study and operation. In addition to this apparatus there have been provided the necessary controlling devices and instruments for handling the wide range of voltages and currents used in experimental tests. The equipment is especially designed for study of the electrical engineering problems which occur in commercial work, and consists of direct and alternating current generators, motors and converters, high and low potential transformers, a Tirrell regulator, synchroscopes, power factor meter, rheostats, voltmeters, ammeters and watt-meters, multipliers, and numerous other smaller pieces of apparatus.

Civil Engineering Laboratory—A first-class Riehle testing machine, 1909 model, 200,000 pounds capacity, operated by

an electric motor, a complete cement-testing outfit, and a good assortment of surveying instruments comprise the laboratory equipment of this department. All of these features, as well as a drafting-room, are located in the new Electrical Building. The large testing machine is used for testing and illustrating the principles governing the strength and elasticity of materials used in engineering construction.

Home Economics Laboratory—The laboratory of the Home Economics Department is located in the basement of Stewart Hall. The cooking laboratory is equipped for eight students working at one time. Besides the gas range, the laboratory contains a coal range. All utensils commonly used in the household are employed. A dining-room, suitably furnished, is used by the students in connection with their work in planning and serving meals. This dining-room also contains the sewing machines and other necessary equipment for sewing.

The department has a good reference library in dietetics, hygiene, household science, house decoration, textiles, and economics. The leading current magazines on subjects of home economics are available to the students doing this work.

Seed Laboratory—The Seed Laboratory is under the direction of the Department of Agronomy. Here farmers and dealers may have seeds tested as to vitality and purity; a report showing percentage value of seed is mailed free to the senders of the samples. The laboratory contains a large germinator warmed by electricity, a set of seed-grading tables, and a large grain display cabinet.

Dairy Laboratory—The Dairy Laboratory is in the new Dairy Building. On the first floor are laboratories for the manufacture of butter, ice-cream, and cheese, and equipment for bottling milk and sterilizing utensils. The refrigeration is by means of a two-and-a-half-ton Remington ammonia compressor. On the second floor at the north end of the building is a large laboratory for testing dairy products. It is fitted with gas, steam, and electricity, and contains apparatus for making quantitative and qualitative tests of dairy products.

SCIENTIFIC COLLECTIONS

GEOLOGICAL AND MINING MUSEUM

The northwest wing of the Mackay Building is devoted to a museum in which the collections of the departments connected with the School of Mines are exhibited. The museum is furnished with beautiful display cases of quartered oak, in which are shown:

1. A type collection of minerals arranged as sulphides, oxides, silicates, etc., the labels giving both the common and mineralogical names, the chemical composition, the locality from which the mineral was obtained, the name of the donor, and such information as is of interest to the general public. This is a large and growing collection containing specimens of over five hundred different mineral species, many of them quite rare, and has been gathered from all over the world.

2. A type collection of rocks containing examples of the more common variety of igneous, sedimentary, and metamorphic rocks, labeled as to name and locality. These include not only rocks from North America but from Europe as well.

3. An exhibit of the mineral resources of Nevada. The object of this collection is to illustrate the mineral resources of Nevada and show the geology of several of its mining camps. The greater part of this collection was obtained from the collection exhibited at the session of the Mining Congress at Goldfield in 1909. It is arranged by counties, the labels giving the name of the specimen, its value, the mining district, and the name of the donor. The collection includes specimens of gold, silver, lead, copper, zinc, iron, manganese, mercury, antimony, arsenic, tungsten, nickel, cobalt ores, sulphur, barite, gypsum, borax, salt, diatomaceous earth, coal, kaolin, graphite, marble, building stones, turquoise, variscite, opal, mica, and other mineral and rocks of economic importance. This collection is being built up as rapidly as possible through gifts from the mining fraternity of Nevada and by systematic collections during the summer vacations. It will eventually form an epitome of the mineral resources of the State, and is already a striking illustration of the varied and extensive mineral wealth of Nevada.

4. The nucleus of a collection illustrating the different

types of mining machinery and appliances. This includes a small five-stamp mill owned by James Fair when a boy and used by him to stamp out pin money from ore given him by his father; two of the first air drills ever used in mining, a Waugh stoper, an Ingersoll-Sargent drill on a tripod; samples of the different wire cables used in mining; models and drawings of the different methods of timbering; methods of loading and firing drill holes, and different types of lamps, fuses, surveying instruments, etc., used in mining.

5. Maps, models, and pictures. These include geological maps of many of the mining districts of Nevada, and a large map showing all the underground workings of the Comstock Lode on a scale of one hundred feet to the inch. About thirty panoramic photographs of the principal mining camps in Nevada are framed and displayed along the wall. In the center of the museum are the large plate-glass models of the workings of the Mohawk mine, Goldfield, and of the National mine, National, Nevada, and a wooden model of the Holmes and Northern Belle mines of Candelaria.

6. Collections. Among the several collections received during the past two years are the loan collection of the United States Geological Survey of the rocks and minerals of Goldfield; the collection of rocks and minerals formerly in the State Capitol at Carson City; the Cole collection, gathered through thirty years by Dr. A. M. Cole of Virginia City; the Malcolm McDonald collection, presented to the University after the death of Mr. McDonald, and several other smaller collections received through various sources.

7. Besides the above, the museum possesses a considerable number of fossils, both of animals and plants, a few Indian relics, and other miscellaneous material of interest.

The museum is open to the public during the school year, and as far as possible every facility will be placed at the disposal of any one who wishes to inspect or study the various collections.

The continued growth of the museum depends largely upon the generosity of those engaged in the development of the mineral resources of Nevada, and contributions of specimens of ores, minerals, and other interesting and instructive material are earnestly desired.

The Mackay museum is under the direction of the College of Engineering.

HERBARIUM

The Nevada Agricultural Experiment Station herbarium now contains 12,000 mounted sheets, nearly all of western species, and at least half of them from Nevada. Certain of the forage plants, as grasses, clovers, and lupines, are especially well represented. Although as yet small, this collection is of considerable importance, as it contains a number of types and typical plants obtained from type localities.

Connected with this herbarium is a large number of negatives depicting various phases of plant life, and a seed collection of 780 specimens.

OTHER COLLECTIONS

Other scientific collections form parts of the working equipment of the Departments of Biology, Entomology, etc.

NEEDS OF THE UNIVERSITY

1. Among University needs is an agricultural building, the museum wing of this building to be used for scientific collections in natural history so that they can be made available to students and to the public.

2. Scholarships. The friends of education, and particularly the friends of the University, are urged to consider the foundation of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a university course, but whose financial resources are inadequate to obtain it for them. The University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands upon it. No means of perpetuating a healthful and elevating influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the coming centuries.

3. An endowment of professorships in the University. The sum of $50,000 will provide an adequate endowment for a chair in the University, the interest of this endowment fund providing the salary of the professor of the special department.

LECTURES AND FACULTY ASSOCIATIONS

PUBLIC LECTURES

GENERAL ASSEMBLY

A general assembly of students of the University and members of the Faculty is under the special direction of the President of the University. Lectures are given by members of the Faculty and by men and women of special eminence in particular fields of study, travel, and business enterprise. Attendance is required of all students.

THE UNIVERSITY SCIENTIFIC ASSOCIATION

The University Scientific Association is an organization of those members of the Faculty who are interested in scientific research. The purpose of the organization is to broaden the outlook and to come in touch with scientific progress outside of one's own sphere of activity. Biweekly meetings are held in the lecture-room of the Mackay Building. Reports are presented and discussed at each meeting. The subjects of the reports are either the result of individual research, or articles of general interest that have recently appeared in the scientific journals. The meetings are open to visitors.

Advanced students find the meetings of considerable value.

THE UNIVERSITY LIBERAL ARTS CLUB

The University Liberal Arts Club, organized in January, 1914, is designed to bring together members of the Faculty whose interest lies primarily in human relations, including the languages and literature, history and the social sciences, education, and similar subjects. Meetings are usually held monthly in the rooms of the Department of Home Economics. Following the paper or address is a free discussion of the points at issue. The Club cordially welcomes to its meetings any one whether from within or without the University community.

HONORARY SOCIETY

The Phi Kappa Phi is a national honor society composed of graduate and undergraduate members of all departments in American universities and colleges. Its prime object is to emphasize scholarship in the thought of college students, to

hold fast to the original purpose for which institutions of learning were founded, and to stimulate mental achievement by the prize of membership. This society elects to membership a certain number from the graduating class, on the basis of high scholarship.

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INFORMATION FOR STUDENTS

SCHOLARSHIPS, GIFTS, AND PRIZES

For the purpose of assisting deserving students and rewarding excellence in scholarship, the following scholarships and prizes are offered for the year 1914–15:

1. A scholarship of one hundred dollars annually, given by Ralph S. Stubbs of New York. This scholarship is given to the most deserving student in the University and is to be used for his or her support while in college.

2. A scholarship of two hundred dollars, given each year for five years, the gift of George Wingfield of Reno. This scholarship will be given—one-half the first semester and one-half the second semester—to the most deserving student.

3. Five University Scholarships of fifty dollars each, to be awarded for excellence in scholarship.

4. Four Alumni Association Scholarships of fifty dollars each, to be awarded to deserving students upon the recommendation of the Scholarship Committee and the approval of the Executive Committee of the Alumni Association.

5. Two Scholarships of one hundred dollars each are offered in the Department of Mathematics. The donor prefers to withhold his name.

6. Four Scholarships of twenty-five dollars each, one for each of the four classes in the College of Arts and Science, to be awarded by the Department of History subject to conditions which will be made known upon application to the Department of History. These scholarships are offered by "a Friend of the University."

7. Two Debating Prizes, the first prize to be thirty-five dollars, the second prize to be twenty dollars, to be awarded to the winners of the preliminary debate in preparation for the contest with the Brigham Young University.

8. In addition to the above, a gold medal is awarded annually to that member of the graduating class who has obtained the highest average grade in scholarship throughout his or her college course.

LOAN SCHOLARSHIP FUND

The Nevada State Federation of Women's Clubs has established a scholarship fund for the State University, to be loaned

to worthy young women students in amounts varying to suit individual needs. The money thus loaned is to be returned to the fund at the borrower's convenience without interest. Students desiring to take advantage of this offer will apply to Miss Emma Vanderlieth, State Chairman of Committee on Student Loan Fund, Carson City, or to Mrs. F. G. Patrick, President of the State Federation of Women's Clubs, Reno.

OTHER AID FOR STUDENTS

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Much of the work in and about the University buildings and grounds is done by young men. Young women are favored whenever possible with such work as typewriting, copying, housework, and dining-hall service. It is to be remembered that the power to favor students with self-help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

THE RHODES SCHOLARSHIPS

Special attention is called to the Rhodes Scholarships in Oxford University, England, to which one appointment from the State of Nevada will be made for each of the years 1917, 1918, 1920, and so on, omitting every third year. The Scholarships are each of the value of approximately $1,500 a year, and are tenable for three years.

Scholars will be selected from candidates who shall have passed a qualifying examination in Latin, Greek, and Mathematics. If necessary, Greek may be temporarily postponed, but only those candidates who have passed in at least Latin and Mathematics will be eligible for a Scholarship. Examinations are held every year, usually in the month of October. Any person who has passed the examination once will be eligible for election at any subsequent time if he satisfies the other conditions of eligibility.

In addition to the requirements of the qualifying examinations, a candidate to be eligible for election from the State of Nevada must—

(1) Be a citizen of the United States and be unmarried.

(2) Be a student in or a graduate of the University of Nevada, or, if a student in some other university or college, a resident of the State of Nevada.

(3) By the first of October of the year for which he is

elected have passed his nineteenth and not have passed his twenty-fifth birthday.

(4) By the first of October of the year for which he is elected have completed at least his Sophomore year in the University of Nevada or in some other recognized degree-granting university or college of the United States.

The appointments thus far made to Rhodes Scholarships from the State of Nevada are as follows:

1907—Arthur Leonidas St. Clair, Deeth, Nevada.

1908—William Scott Unsworth, Reno, Nevada.

1910—Stanley Mayhew Wilton, Goldfield, Nevada.

1911—Cedric Harding Beebe, Reno, Nevada.

1913—Floyd Sherman Bryant, Sparks, Nevada.

1914—Walter Clarence Jepson, Verdi, Nevada.

The Rhodes Scholarships offer an unusual opportunity both for a university education in the Liberal Arts, the Sciences, Engineering, or the professions of Jurisprudence or Theology, and for travel among the chief centers of life and activity in foreign lands. These advantages, with the gift of financial means ample for their enjoyment, have made these Scholarships the most attractive ever established.

Further information about Oxford and the Rhodes Scholarships may be secured by addressing the President of the University of Nevada, or the Secretary of the Committee, Rev. Samuel Unsworth, Reno, Nevada.

EXPENSES OF STUDENTS

TUITION

In accordance with legislative enactment no fees are charged for tuition. This applies to students from outside of the State as well as to students from Nevada. There is, however, a fee of $5 which must be paid at the beginning of any semester in which any degree or diploma is awarded.

RAILWAY RATES

The railways of the State are generously cooperating with the Regents of the University by giving reduced rates to students when traveling to and from the University. The Southern Pacific Company, the Nevada Northern, the Las Vegas and Tonopah, the Nevada Central, and the Eureka and Palisade railroads will sell tickets to students at one-half the usual local rate. To obtain the benefits of the half rates the

student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the University of Nevada, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to Reno.

UNIFORMS

The two uniforms with which the members of the Cadet Battalion are required to provide themselves cost about $26. Deposits for the same will be made with the Comptroller. The uniforms may be worn in place of civilian dress.

The young women are required to provide themselves with a regulation gymnasium outfit costing about $5.50. The deposit for a key to a gymnasium locker is 50 cents.

THE DORMITORIES

Manzanita Hall is the University home for young women. Mrs. A. E. Kaye, a lady of large experience and wisdom, is Mistress of Manzanita Hall. The ventilation, heating, lighting, and the furnishing of the rooms are of the very best.

Lincoln Hall is the University home for young men. The building has accommodations for one hundred young men, and is equal to the best of modern college halls. The Master of Lincoln Hall is Mr. Scott E. Jameson.

Students coming to either of the University dormitories should provide themselves with the following articles: four white table napkins; four sheets, two and one-fourth yards by one and one-half yards; four pillow-slips, twenty by thirty inches; two white bedspreads, the same size as the sheets; one pair of blankets; one comfort, the same size as the sheets; one comfort of extra thickness, three feet by six, to put on the mattress; six good towels; personal toilet articles, such as soap, sponges, comb, and brushes. Young women should also have two large aprons for work in the laboratories. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the owner.

On being assigned a room in Lincoln Hall a deposit of $1 will be required to cover any possible damage to furniture or fixtures. This deposit will be refunded at the end of the semester on presentation of a proper certificate from the Master of the Hall.

THE DINING HALL

For the accommodation of the students, the University maintains a dining hall in commodious quarters built especially for

it between Manzanita Hall and Lincoln Hall. The dining-hall equipment and services are organized with a view to securing board and table service of the most acceptable character, and students living in the dormitories are expected to take their meals there.

Students boarding at the Dining Hall and taking rooms in the dormitories will be furnished board and room at the rate of $18 per month. Students boarding at the Dining Hall but not rooming at the dormitories will be charged at the same rate of $18 per month.

Students rooming at either of the dormitories without boarding at the Dining Hall will be charged $5 per month for rooms.

REGULATIONS GOVERNING THE DINING HALL

1. Board is payable in advance.

2. Students desiring to board regularly at the University Dining Hall will be required to register with the head waiter.

3. Registration at the Dining Hall will be made only on presentation of the Comptroller's receipt for board paid, or of a special permit issued by the President. In order to furnish board at the rate charged, it is imperative that all board bills be paid, and it is therefore ordered that no credit be extended unless well guaranteed. Students expecting to board at the Dining Hall will be expected to come with enough money to keep their board paid one month in advance. All of the money collected for this purpose is used to make the bill of fare as good as it can be made for the price, and any unpaid bill deprives every boarder of something that he ought to get.

4. No rebate shall be made on board for less than one week's continuous absence. Due notice must be given of the intended absence or no rebate will be allowed.

5. Regular boarders having guests for extra meals, or persons, not regular boarders, taking meals at the Dining Hall must arrange for same with head waiter.

The Dining Hall is open to all members of the University.

Table board may be obtained elsewhere at from $25 to $30 per month.

Rooms in private houses may be rented at from $10 to $15 per month.

FEES AND DEPOSITS

ATHLETIC FEE—A fee of $4 per semester is levied upon every student by the Associated Student Body. This fee is for the purpose of carrying on athletic sports, such as football, basket-ball, baseball, and track athletics, and debating. In

return for the payment of this fee the student receives free admission to all games and events which take place during the year, and the right to a vote at the meetings of the Associated Student Body.

LABORATORY FEES—The maintenance of its large and valuable laboratories is a constant and heavy expense to the University. For this reason certain departments have to charge fees to cover special expenses incident to their work. These fees are calculated in amount to cover the cost of the materials used and the expense incurred by the individual students; hence the amount of the fee varies in the different laboratories ranging from $1 to $10 per semester.

LABORATORY DEPOSITS—Deposits are required to cover costs of breakage in laboratory courses where breakages are liable to occur. These deposits are payable at the beginning of each semester. At the end of the semester deduction is made for actual breakage, and the balance of the deposit is refunded to the student upon order from the head of the department.

If a student takes two or more courses in any one department where a fee is required, the fee for each course must be paid; but one deposit only is required under the same conditions.

The fees and deposits charged each semester in the different courses are as follows:

FEES AND DEPOSITS PER SEMESTER, 1914–1915

	Fees	*Deposits*
Botany 1, 2, and 3, each	$1.00	$2.00
Botany 25	2.00	2.00
Chemistry 2, 4, 5, 6, 7, 22, 23, 25, 26, 28, 30, 40, 45, and 60, each	2.50	5.00
Civil Engineering 21, 25, and 35, each		5.00
Dairy Husbandry 1, 21, and 23, each	1.00	5.00
Diploma (Degree or Certificate)	5.00	
Education 8	1.00	
Geology 23b		5.00
History Syllabus (according to work being done)	25 to 1.00	
Home Economics, Cooking	1.00	
Home Economics, Sewing	1.00	
Horticulture 1	2.00	
Hygiene 1, 22, and 23, each	2.00	2.00
Mechanic Arts 1, 2, 3, and 4, each	2.00	
Mineralogy 1 and 2, each	2.50	
Mineralogy 22		5.00

Mining and Metallurgy 32, First semester	$5.00	
Second semester	7.50	
Mining and Metallurgy 30 and 39, each	10.00	
Physical Education for Women (locker key)		$0.50
Physics 1, 24, and 40, each	1.00	5.00
Physics 3 and 21, each	2.00	5.00
Typewriting	1.00	
Zoology 1 and 10, each	1.00	2.00
Zoology 2, 23, 24, and 40, each	2.00	2.00

TABULAR ESTIMATE OF NECESSARY EXPENSES OF STUDENTS, EXCLUSIVE OF CLOTHING AND TRAVELING EXPENSES

	Low	*Moderate*	*Liberal*
Tuition	None	None	None
Board, 36 weeks	$144	$144	$250
Room, light and fuel	18	18	72
Washing and sundries	20	30	40
Text-books and stationery	8	12	18
Laboratory and athletic fees	10	15	17
Totals	$200	$219	$397

STUDENT AFFAIRS

GOVERNMENT OF THE STUDENTS

In the government of the University the largest liberty consistent with good work, good order, and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of university life are advised to remain at home or go elsewhere.

STUDENT ORGANIZATIONS

The Associated Students—The student body is organized into an association called "The Associated Students of the University of Nevada." Through this association the students handle all matters relating to the student body as a whole, and control all athletic interests of the University subject to the approval of the Faculty Committee on Athletics. The officers of this association are elected by popular vote. By the payment of the athletic fee of four dollars a student receives the A. S. U. N. card which entitles him to a vote in the association and admission to all local games, contests, or other events under the association's management.

STUDENT OFFICERS, 1914–1915

President	THOS. P. WALKER,'15
Vice-President	RICHARD SHEEHY,'15
Secretary	JESSIE HYLTON,'15
Treasurer	GEORGE OGILVIE,'15
Women's Athletic Manager	DOROTHY BIRD,'15
Graduate Manager	SILAS E. ROSS,'09
Editor *U. of N. Sagebrush*	LOUIS SOMERS,'15
Assistant Editor *Sagebrush*	IRVING RIVETT,'17

Manager *Sagebrush*.....JOE MCDONALD,'15
Assistant Manager *Sagebrush*.....RALPH DROWN,'16
Class Representatives on Executive Committee.... { H. H. HOVEY,'16 / JOHN HEARD,'17

The Engineering Society—All engineering students and the engineering faculty are members of the Engineering Society. This society meets once or twice a month during the semester. Engineers and technical men are invited to address the members. The purpose of the society is to broaden the view-point and increase the knowledge of the students, as well as to extend their acquaintance among practicing engineers.

The Agricultural Club—The Agricultural Club consists of students of the Agricultural College. The purpose of the club and its motto are the same: "More farmers and better farms."

Christian Associations—The Young Men's and the Young Women's Christian Associations have branch organizations among the students. The young women's branch has a membership of fifty girls in the University. The purpose of the association is the maintenance of high standards in all student relations, mutual helpfulness and pleasure, and the promotion of Christian ideals. Through private benefaction a resident secretary is engaged to direct and serve the University women in any way that they may desire.

Musical Organizations—Volunteer organizations for the promotion of both vocal and instrumental music are heartily encouraged. The organizations at present are the Men's Glee Club, the Women's Glee Club, the University Band, and the University Orchestra.

Other Organizations—The students have established fraternities, sororities, literary societies, musical, and social clubs.

STUDENT PUBLICATIONS

The students publish a weekly paper known as the *U. of N. Sagebrush*. The Junior Class publishes an edition of the Junior Annual known as the *Artemisia*.

ATHLETICS

The University is provided with an excellent gymnasium, and an instructor is in charge of the Department of Physical Education for Women. The physical training for men is included in the Department of Military Science and Tactics.

Excellent facilities are provided on the Mackay Athletic Field for all branches of athletics. Rugby football, baseball, track, basket-ball, and tennis are the games of special prominence at the present time. The policy of the University is to foster the spirit of honor and manliness in athletics, to suppress evil tendencies, and to see to it that athletic sports do not encroach upon the claims of scholarship.

To represent the University of Nevada in any public contest, a student must conform to the following rules:

1. He must be an amateur.

2. No student who is taking less than eight hours of University work or their equivalent, and who is not attending these classes regularly, shall be allowed to represent the University in an athletic contest.

3. No student shall represent the University in any athletic contest who, during the previous semester, has failed or been conditioned in more than one-half of his work; provided he shall not have made up one-half of his conditions within the first three weeks of the semester.

4. On the first of every month the captain of a team must submit a complete list of players comprising the squad to the Delinquent Scholarship Committee. The Delinquent Scholarship Committee shall, on receipt of this list, notify any student where work is unsatisfactory.

5. The captain of each team shall submit to the Faculty Committee on Athletics at least seven days before each game a list of these persons from whom the team is to be chosen, and any person who, at that time, is reported as not passing in 60 per cent of his work shall be debarred from participating in that game.

6. He must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

7. He must pass a physical examination satisfactory to the Committee on Athletics.

8. Schedules for all games must be submitted to the Faculty Committee on Athletics and approved by them.

9. A similar approval is required in the case of every individual intending to represent the University of Nevada in any single contest.

MILITARY SCIENCE AND TACTICS

1. Appreciation of the advantages of military drill and training in the education of the youth, is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, and instils habits of obedience to lawful authority. A general knowledge of the system of national defense, of the organization of the Army and the Navy, and their relation to the civil power, is considered essential to intelligent suffrage.

2. The department is in charge of an officer of the United States Army, detailed by the War Department as Professor of Military Science and Tactics, and as Commandant of Cadets.

3. Students receiving military instruction are designated "Cadets," and are organized into a battalion of infantry, officially designated as "The University of Nevada Battalion of Cadets."

4. The Battalion of Cadets is composed of all undergraduate male students of the University, with the following exceptions:

a. Students physically disqualified.

b. Students 27 years of age or over.

c. Students who have previously had the military training required by this University. To enable students to obtain credits for previous military training, the instruction must have been received as a cadet at either of the national academies; as an enlisted man in any branch of the regular army whose service has been terminated by an honorable discharge; as a commissioned officer in the National Guard of any State recognized by the War Department; or as a cadet in the military department of any institution having an officer of the army detailed as Professor of Military Science and Tactics, and from which this University accepts credits which count toward a degree.

d. Students serving in the band are excused from other military duties.

e. Students in their senior year who do not hold a commission, and whose military work for the three previous years has been satisfactory, may be excused from military duties at the discretion of the Committee on Military Affairs.

5. Cadets are required, upon entrance, to provide themselves with a uniform of prescribed design, consisting of blouse, trousers, cap, black shoes, white gloves, together with the insignia appropriate thereto, and also with a khaki service uniform.

6. Cadets will wear the uniform at all times while receiving military instruction.

7. The wearing of composite uniform is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. Neatness in dress and appearance is at all times insisted upon.

8. Appointments in the Battalion will be determined by military ability, which shall be decided from a careful consideration of the following points:

a. Character.
b. Attendance.
c. Military conduct.
d. Zeal.
e. Soldierly bearing.
f. Aptitude for command.
g. Knowledge of drill and other duties as determined by examination and practical application.
h. Recommendation of superior officers.
i. Length of service in the Battalion.

Generally the commissioned officers are taken from the Senior class, the sergeants from the Junior class, the corporals from the Sophomore class.

9. The commissioned officers will receive their commissions from the Governor of the State. These commissions will entitle the Governor to the services of the officers in case of insurrection or rebellion. After graduation, commissioned officers will be ranked as retired officers of the University of Nevada Battalion of Cadets, unless they choose to resign at the time of their graduation.

10. Every cadet who is a candidate for graduation in any of the schools of the University will be required to complete the required course of military instruction. Other cadets will

receive an amount of military instruction proportionate to the length of their attendance at the University. Students who are excused from military instruction will be required to take additional work aggregating the number of credits allowed for work in the Freshman and Sophomore years in Military Science and Tactics.

11. The course of instruction is in accordance with rules prescribed by the President of the United States, and is both practical and theoretical, special prominence being given to the former.

12. Each year the names of such students belonging to the graduating class as have shown special aptitude for military service will be forwarded to the War Department and to the Adjutant-General of the State.

13. The punishments to which cadets are liable are:

a. Suspension of privileges. Private reprimand.

b. Suspension from the University. Reduction to ranks.

c. Reprimand in public or in orders. Dismissal from the University.

Punishments of the first class may be inflicted by the Commandant; those of the second class by the Commandant with the approval of the Committee on Military Affairs; those of the third class by the Committee on Military Affairs with the approval of the President.

14. No military body can attain a high grade of efficiency unless thorough discipline is maintained. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. In order to command, one must learn to obey.

15. Courtesy among military men is indispensable to discipline. Military authority will be exercised at all times with firmness, kindness, and justice; superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

16. Applications for redress of grievances, if made by individuals in a proper manner, will always receive due attention.

17. Upon registration, each cadet will immediately take steps to familiarize himself with the Regulations for the Department of Military Science and Tactics.

18. All cadets are required to perform the prescribed military duties unless excused in advance by the President or the Commandant. In case of absence without previous excuse, a written explanation will be submitted upon resuming duty.

In case of sickness or injury, such explanation must be authenticated by the signature of a parent or of a physician.

19. Neglect of a recitation or an examination will be punished in accordance with the rules existing in the other departments of the University.

20. Cadets will be held strictly accountable for the care and proper use of the public property in their possession. They will use only such arms and equipments as are officially assigned (by number to each cadet) and must return them to their proper places on the racks immediately after drill.

ADMISSION

EXAMINATIONS AND CREDENTIALS

1. Entrance to any of the Colleges of the University shall be by examination; but a graduate of an accredited school will be received without examination in the subjects in which such school is accredited.

2. High Schools of other States, if accredited by a State University or other University or College, will be recognized at this University in so far as the work done is equivalent to the work required. Each applicant must supply evidence that his school is accredited.

3. All regular students not already credited with College Freshman Composition must pass an examination in English Composition.

4. All new students, of whatever rank, should meet the Committee on Admission and Advanced Standing.

SPECIAL STUDENTS

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations. Admission will be granted only on the recommendation of the professor under whom the special studies are to be taken. Special students must be at least twenty years of age. Exceptions to this rule may be granted for adequate reasons. Such students cannot become candidates for a degree until they have satisfied the entrance requirements of the school or college in which the degree is sought.

VISITORS

With the consent of the instructors concerned, students may be admitted to departments as visitors. They shall be enrolled and pay fees, but receive no credit towards a degree.

GRADUATE STUDENTS

Graduate students will be received upon the recommendation of the Committee on Graduate Courses and of the departments in which they desire to pursue their work.

ACCREDITING OF SCHOOLS

Any school in the State may be accredited in such subjects of high-school grade as it is able to complete satisfactorily.

When accrediting is desired by any high school, the University will examine the school by such method as may be needful in order to determine the amount of work satisfactorily accomplished. When practicable, such examination will be by means of a visit of inspection by the University examiner, but such inspection may be supplemented by means of sample examination papers and note-books. If the result of the examination is satisfactory to the Committee on Admission and Advanced Standing, in consultation with the departments concerned, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required. The University record of its graduates will largely determine a school's fitness to remain on the accredited list.

High schools having but one teacher doing high-school work are advised not to attempt more than the first two years' work of the high school. Those pupils who have been prepared in all of the subjects of the first two years will, as a rule, be able to continue their studies far more advantageously than if they are prepared in three years' work of any one or more subjects.

A conference of high-school teachers and members of the Faculty concerned with accrediting will be held each year on the day preceding the Academic field meet.

ADMISSION REQUIREMENTS

Subjects with Credits[1]

1.	English (a)	1
	English (b)	1
	English (c)	1
	English (d)	1
2.	Latin (a)	1
	Latin (b)	1
	Latin (c)	1
	Latin (d)	1
3.	Greek (a)	1
	Greek (b)	1
4.	German (a)	1
	German (b)	1

[1] A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. Two hours of laboratory work are regarded as the equivalent of one hour of prepared work.

5. French (a)	1
French (b)	1
6. Spanish (a)	1
Spanish (b)	1
7. English History (a)	1
Ancient History (b)	1
Medieval and Modern History (c)	1
American History and Civics (d)	1
8. Algebra, Elementary (a)	1
Plane Geometry (b)	1
Advanced Algebra (c)	1
Solid Geometry (d)	½
Plane Trigonometry (e)	½
9. Physics	1
10. Chemistry	1
11. Physical Geography	½ or 1
12. Botany	½ or 1
13. Zoology	½ or 1
14. Physiology	1
15. Bookkeeping	½
16. Shopwork	1
17. Drawing	1
18. Agriculture	½ or 1
19. Manual Training	½
20. Domestic Science	½ or 1

For entrance to the several colleges the requirements are as follows:

1. TO THE COLLEGE OF ARTS AND SCIENCE AND THE COLLEGE OF EDUCATION.

	In Candidacy for the Degree of A.B.	*For the Degree of B.S.*
English	3 units (a, b, and c)	3 units (a, b, and c)
Foreign Language	4 units (Latin a and b, and 2 additional units in Latin, or German, or French, or Spanish)	2 units (in *one* language)
History	2 units	1 unit
Mathematics	2 units (a and b)	3 units (a, b, and c)
Natural Science	1 unit	2 units
Elective (in academic or vocational subjects)	3 units	4 units
Total	15 units	15 units

2. To the College of Agriculture.		3. College of Engineering.	
English	2 units (a and b)[1]		2 units (a and b)[1]
History	1 unit (d)		1 unit (d)
Mathematics	2 units (a and b)		4 units (a, b, c, d, and e)
Natural Science	2 units		2 units (one to represent advanced work)
Elective (in academic or vocational subjects)	8 units[2]		6 units
Total	15 units	Total	15 units

For the present, a candidate for entrance to any College who cannot satisfy all of the specific requirements listed above, but who can present fifteen acceptable entrance units, will be admitted as a regular student. Such a student, however, must, in his Freshman year, if possible, arrange his work in such a way as to satisfy all of the specific requirements for entrance to his College.

ADVANCED STANDING

The Committee on Admission and Advanced Standing, after consultation with the departments concerned, will grant credit for entrance units offered in excess of the required number.

DESCRIPTION OF ADMISSION REQUIREMENTS

1. English (4 units)

The requirement in English includes both the study of the literature, listed in Groups I–V, and the work in grammar, composition, and rhetoric outlined below.

For the minimum requirement the student must present from I, any two; from II, any two; from III, one-half the work outlined; from IV, one-half the work outlined; from V, one-half the work outlined.

LITERATURE

I. Ivanhoe, Silas Marner, and the Vicar of Wakefield, or Henry Esmond; and, for outside reading, any six of the following: The Talisman, The Three Musketeers, Treasure Island, The Last of the Mohicans, The Jungle Book, Quentin Durward, Rob Roy, The House of the Seven Gables, The Tale of Two Cities, Lorna Doone, Emma, Oliver Twist, The

[1] Three units in English will be required after August 1, 1915, thus decreasing the number of elective units by one.

[2] For entrance to the School of Home Economics candidates are advised to present one unit of Domestic Science.

Christmas Carol, Pilgrim's Progress, With Fire and Sword, The Cloister and the Hearth, The Newcomes, Les Misérables, The Crisis, The Virginian.

II. The Merchant of Venice, Julius Cæsar, Macbeth.

III. The Vision of Sir Launfal, The Chambered Nautilus, Thanatopsis, The Deserted Village, The Cotter's Saturday Night, Gray's Elegy, The Ancient Mariner, L'Allegro, Il Penseroso, Gareth and Lynette, or the Passing of Arthur, The Princess, and any two of the following: Michael, The Rape of the Lock, Childe Harold (Canto IV), Chaucer's Prologue, Lays of Ancient Rome; selections from Wadsworth, Shelley, Keats, and Arnold.

IV. The Alhambra, The Great Stone Face, The Ambitious Guest, The Gold Bug, The Purloined Letter; and, for outside reading, any two of the following: Hamlin Garland's Main Traveled Roads; Bret Harte's The Luck of Roaring Camp; London's The Call of the Wild; Kipling's The Day's Work; Maupassant's The Coward, The Piece of String, The Necklace; The Book of Ruth.

V. Franklin's Autobiography, or Thoreau's Wild Apples; Addison's Sir Roger de Coverly, or Carlyle's Essay on Burns, or Holmes's Autocrat of the Breakfast Table; Burke's Speech on Conciliation, or Webster's Bunker Hill Oration.

GRAMMAR, COMPOSITION, AND RHETORIC

The aim of the course should be to train in correct expression and effective presentation of simple exercises in description, narration, and exposition. A simple text-book in rhetoric should be used. An amount of grammar should be required sufficient to insure correct expression.

2. LATIN (4 units)

a (1 unit). Collar and Daniell's First Latin Book, with the exception of the Colloquia, Collar's New Gradatim, and D'Ooge's Colloquia Latina, pp. 1–31, the exercises in the latter to be read only at sight, represent the nature and amount of preparation required.

b (1 unit). Greenough, D'Ooge, and Daniell's Second Year Latin, pp. 1–220, with prose composition, or an equivalent.

c (1 unit). Kelsey's selections from Ovid, and Gayley's Classic Myths. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's Orations and Letters. The requirement in Gayley's Classic Myths will, however, be maintained.

d Vergil (1 unit). Vergil's Æneid, Books I–VI. Emphasis should be laid upon the development of the student's power to understand Latin prose and poetry in the original, and upon the thought of the authors read rather than upon the syntax. The writing in Latin of connected English sentences. In this prose work the emphasis should be laid upon the order of words, the simpler features of sentence structure, and means of connecting sentences in paragraphs.

3. GREEK (2 units)

a (1 unit). Greek Grammar, including accents, the ordinary inflectional forms, the simpler rules of syntax, and the translation of easy English sentences into Attic Greek. White's First Greek Book represents the amount of preparation required.

b (1 unit). Xenophon's Anabasis, Books I–IV, with questions on the forms, syntax, and subject-matter. The translation into Attic Greek, of simple passages of connected narrative based on the Anabasis. (Parts I and II of Pearson's Greek Prose Composition represent the nature and amount of preparation required.)

4. GERMAN (2 units)

a (1 unit). A thorough knowledge of the principles of German grammar. This includes the conjugation of weak and strong verbs, and of the modal and time auxiliaries; the declension of nouns, pronouns, articles and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

b (1 unit). Reading and translation of the following texts or equivalents: Schiller's Maria Stuart, Modern Prose and Poetry.

The work in German composition should be continued through the second year. Harris's German Composition is recommended.

5. FRENCH (2 units)

a (1 unit). The ability to read at sight easy French prose, to translate correctly simple English sentences into French,

familiarity with all the common idioms of the language, a thorough and accurate knowledge of the principles of French grammar. Rollins's or Super's French Reader indicates the amount of material to be read. The requirements in grammar involve: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminines of adjectives, the plurals of nouns and adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite articles (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work, the student may use Chardenal's Complete French Course; later, Fraser and Squair's Grammar is recommended.

b (1 unit). The translation into English of the following texts or their equivalents: Le Voyage de M. Perrichon, by Labiche and Martin; About's Le Roi des Montagnes; Daudet's Le Petit Chose; de Banville's Gringoire; Meilhac and Halévy's L'Été de Saint Martin; Coppée's Le Luthier de Crémone; Le Trésor.

6. SPANISH (2 units)

a (1 unit). For the first year in Spanish, Ramsey's, Hills and Ford's, Knapp's, Garner's, or Wagner's Spanish Grammar may be used. Selections from Matzke's Spanish Reader or Hills's "Spanish Tales for Beginners," or an equivalent are to be used.

b (1 unit). For the second year Galdós's Marianela, Partir a Tiempo, El Pajaro Verde, Electra, and selections from Gil Blas, or equivalent texts are to be read.

7. HISTORY (4 units)

(*a*) English History (1 unit). A knowledge of the important epochs is required. Larned's History of England indicates approximately the ground to be covered. The main purpose of the requirement is to prepare for the intelligent study of English literature, therefore constant reference should be made to the literary development of the English people.

(*b*) Ancient History (1 unit). This includes The Beginnings of Civilization, or the early Oriental Theocracies; Greece and Macedonia; Rome to the time of Charlemagne. The amount required is indicated by West's Ancient History, or Wolfson's Essentials of Ancient History.

(*c*) Medieval and Modern History (1 unit). A knowledge of the chief facts of these periods, equivalent to material offered in a work like Harding's Essentials in Medieval and Modern History.

(*d*) American History and Civics (1 unit). A knowledge of the outline of American History, and of the nature of federal, state, and local government. The requirement represents three things: the amount of material offered in a text-book in history, such as Channing's Student's History of the United States, a text-book in government such as Hinsdale's American Government, or Bryce's American Commonwealth (abr. ed.), or their equivalent, and systematic reading of assigned references, which should be summarized in a note-book.

8. MATHEMATICS (4 units)

(*a*) Algebra (1 unit). Addition, subtraction, division, and multiplication of algebraic expressions; simple equations, simple simultaneous equations of two or three unknowns; factoring; graphs; fractions; ratio and proportion; highest common divisor and least common multiples by the factor method; square root; radicals and fractional exponents simply treated; elementary treatment of quadratic equations.

(*b*) Plane Geometry (1 unit). Rectilinear figures; the triangle; parallel lines; the quadrilateral; polygon; circle, ratio and proportion; similar polygons; area of polygons and the circle.

(*c*) Advanced Algebra (1 unit). Review of elementary algebra; quadratic equations; simultaneous quadratic equations; exponents and radicals; binomial theorem; logarithms; determinants; mathematical induction, progression, and other forms of series; theory of equations.

(*d*) Solid Geometry (½ unit). Lines and planes; dihedral and polyhedral angles; polyhedrons; prisms; pyramids; similar and regular polyhedrons; cylinder; cone; sphere; similar solids; mensuration and solid figures.

(*e*) Plane Trigonometry (½ unit). The development of the general formulæ of plane trigonometry with application to the solutions of plane triangles and the measurement of heights and distances. When possible about two weeks should be spent on spherical trigonometry.

9. PHYSICS (1 unit)

The requirement represents at least a daily exercise during one school year, which falls within the last two years of prep-

aration for college. The course should cover the amount of material offered in any of the best modern text-books of Elementary Physics, such as Carhart and Chute's High-School Physics, or the First Course in Physics by Millikan and Gale. The instruction should be based upon laboratory work by the student, performed under the teacher's supervision, and classroom demonstration by the teacher. The student's laboratory note-book should be presented to the Department of Physics at time of entrance.

10. CHEMISTRY (1 unit)

The elements of Chemistry as contained in books of such grade as Newell's Descriptive Chemistry, or Hessler and Smith's Essentials of Chemistry, and an amount of laboratory work equivalent to that outlined in the Manuals which accompany these texts, should be completed. Emphasis should be placed upon the elementary fundamental laws. The laboratory work should include some quantitative experiments dealing with combining atomic and molecular weights.

11. PHYSICAL GEOGRAPHY (½ or 1 unit)

Such text-books as those by Davis, Dryer, Fairbanks, or Tarr represent the amount and grade of the work required. It is suggested that wherever feasible the course be continued throughout the year, and laboratory and field work be introduced.

12. BOTANY (1 unit)

One-half unit will be allowed to any high-school student who has an intelligent knowledge of Andrews's Botany All the Year Round, from pages 1 to 233. (American Book Company, San Francisco.)

For one unit the entire book should be covered and a laboratory note-book of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pages 289 to 293.

13. ZOOLOGY (1 unit)

Five hours a week for a whole year should be given to this subject. Of these five hours three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's Introduction to Zoology (The Macmillan Company, New York). Merrill's Studies in Zoology (American Book Company, San Francisco). All notes and drawings

should be submitted to the Department of Zoology at the time of entrance.

14. PHYSIOLOGY (1 unit)

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work. A microscope and prepared slides of human or animal tissues are necessities. Martin's Human Body (Briefer Course), Hewes's High-School Physiology, and Macy and Norris's Physiology for High Schools, are recommended as texts. The text-books should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

15. BOOKKEEPING (½ unit)

The bookkeeping required for admission includes a year's work in double-entry bookkeeping and involves a knowledge of balance sheets, invoice, cash and sales books, a thorough understanding of notes, checks, drafts, billing, and, in general, of all papers used in business.

16. SHOPWORK (1 unit)

Mature students with practical experience in shops or any branch of engineering may, upon recommendation of the department concerned, receive credit to the extent of not more than one unit for such work.

17. DRAWING (½ unit)

Type solids. Still life. Water color from nature. Designing. This represents not less than three years' work, one hour a week.

18. AGRICULTURE (½ or 1 unit)

19. MANUAL TRAINING (½ unit)

20. DOMESTIC SCIENCE (½ or 1 unit)

MATRICULATION

1. The application for admission blank, properly filled out and signed by the principal, should be in the hands of the Committee on Admission and Advanced Standing three days before the time set for the entrance examination. In case

the credentials are satisfactory, the applicant need not appear until the day set for registration.

2. All candidates for admission to the University by examination shall obtain from the Registrar a signed card admitting them to the examinations desired. All other applicants for admission shall be sent a card for such examinations as they may be required to take.

3. When a student has been admitted by credentials or examination, he is given an admission card by the Registrar. This card must be presented to the Librarian before any books may be withdrawn, and to such other officers of the University as may call for it.

4. All candidates admitted to the University shall be on probation for the first semester.

REGISTRATION

METHOD OF REGISTERING

1. On registration day the student secures from the Registrar a student registration blank, upon which his studies for the semester are to be entered and the card otherwise filled out in accordance with the directions printed thereon.

2. In registering, the rules regarding conditions and failures, maximum limit of hours, and status should be carefully observed.

3. Juniors and Seniors in the College of Arts and Science should register in accordance with their Group Elective Schedule, of which they should keep a copy for reference. The card should be signed by the major and minor professors as advisers.

4. The signature of each instructor and the approval of the Dean must be obtained for courses registered in before the card is deposited with the Registrar.

5. After paying his fees the student is given a certificate of registration stamped by the Comptroller. This certificate must be presented to each instructor at the time of enrollment and to such other officers of the University as may call for it.

CLASSIFICATION OF STUDENTS

In registering, a student shall give his status as *Regular*, *Limited*, *Partial*, or *Special*, according to the rules following:

1. For "Regular" Freshman standing, a student must be accredited in all the Preparatory work; or his entrance deficiencies must not exceed one high-school unit, and such

deficiencies must be made good by the end of the Sophomore year.

2. For "Regular" Sophomore, Junior, or Senior standing, the student must satisfactorily complete all of the required work of the preceding year; or his deficiencies must not exceed three College units in any one semester, and he must be taking at least the full number of hours prescribed by his course.

3. A student having two units of entrance deficiencies may register as a "Limited" Freshman, but these deficiencies must take precedence over all other work registered for.

4. A "Limited" Sophomore, Junior, or Senior student is one with deficiencies of more than 3 and less than 9 College units in any one semester (or not more than 3 semester courses) and who is otherwise taking the full number of hours prescribed by his course. A student having deficiencies of 9 or more College units, for any one semester at the beginning of the Academic year, shall register in the lower class.

5. A "Partial" Freshman, Sophomore, Junior, or Senior student is one who is either permitted or required to register for a smaller number of hours than is regularly prescribed by his course. He shall be designated as a member of that class to which the majority of his hours belong.

6. A "Special" student is one not a candidate for a degree who is pursuing a special course with Faculty and departmental permission.

ENROLLMENT

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, with the consent of their Dean, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical education. The three extra hours now allowed above the regular number of hours required in any one semester are made the absolute maximum limit of hours for all schools. Students with one or more conditions shall be deprived of the privilege of taking any extra hours until such condition has been removed.

1. At the first meeting of each class the student fills out an enrollment card. The Registrar's duplicate should be sent by instructors to the Registrar not later than two weeks after enrollment.

2. After enrollment a course may be dropped or a new course added only by permission of the Committee on Regis-

tration and Delinquent Scholarship, and of the department concerned.

3. All courses finally enrolled in shall be completed. In case a course is elective, however, with the permission of the Registration and Delinquent Scholarship Committee and of the department concerned, a student may drop the course at any time during the first twelve weeks of the semester, and the course will be canceled from his record. No refund of fee will be made after the first month after registration.

4. The student is held responsible for the knowledge of his standing and the requirements for graduation.

5. Any failure in properly registering or enrolling may result in failure to graduate.

WORK DONE WITHOUT REGISTERING

Rule adopted by the Registration and Admission and Advanced Standing Committees in joint session on February 1, 1913:

Any work done but not registered for, and for which advanced standing is asked, will be allowed one-half credit. After this date *no* credit will be allowed for work not registered for, except in the case of work done in vacation time.

CONDITIONS AND FAILURES

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the Registrar's office and may subject the student to admonition, suspension, or dismissal. A student whose work is unsatisfactory may be placed on probation, and may be required to withdraw at any time thereafter if satisfactory improvement is not shown. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time, should obtain leave of absence from the Committee on Registration and Delinquent Scholarship.

Each instructor will determine the final grade of students by any method that he may consider best adapted to his courses.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by satisfying the requirements of the department.

3. Only one reexamination may be given for the removal of

any condition. The regular time for such reexamination shall be the beginning of the college year.

3. Any condition not removed by the time the course is next repeated becomes a failure and is subject to the rules for failures; but, in case of special students, the Committee on Registration and Delinquent Scholarship may grant exemption from this rule.

5. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the condition within the prescribed time shall be considered as having failed.

6. Any student who fails in any course shall be required to repeat the course regularly in the next succeeding class, unless the Dean shall permit an extension of time or the substitution of another course.

7. Students having failed in over one-half of the preceding semester's work, or having received conditions in more than two-thirds of the work of the preceding semester, will be allowed to register only on presenting the written permission of the Registration and Delinquent Scholarship Committee.

GRADUATION

For graduation from the University of Nevada, an attendance of at least one year and the completion of the course of study of some University school or college are required. Credit is given for work done in other institutions of similar rank and character.

To the students with an average of 90 per cent, or over, in all of the work required for graduation the degree "With Honor" will be given.

THESES

A satisfactory thesis, prepared in accordance with the following rules, may be required of each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

NOTE—All, except new students, who apply for registration on days other than those named in the calendar, will be charged a fee of two dollars, and all students entering late must obtain consent of instructor before enrolling in any course.

It is expected, therefore, that the thesis will show the following characteristics, viz: scientific and literary knowledge and good arrangement and presentation of subject.

In order to insure time for the satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

The thesis should be typewritten upon 8½x11 paper and bound in a 9x11¼ flexible-backed cover. All maps and drawings or other illustrations should be so arranged that they can be bound within the same cover.

Two copies of each thesis accepted for graduation must be placed in the University library.

The title page should conform to the style of the following sample title page:

UNIVERSITY OF NEVADA

The Origin of the English Gilds

A THESIS
SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE IN CANDIDACY FOR THE DEGREE OF BACHELOR OF ARTS

(Department of History)

By
JOHN EDWARD SMITH
Reno, Nevada
1914

DIPLOMAS AND BACCALAUREATE DEGREES

1. The Degree of Bachelor of Arts or Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the College of Arts and Science.

2. The Degree of Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the College of Agriculture, the College of Engineering, or the College of Education.

3. A diploma entitling the holder to a State Teacher's certificate of High-School Grade is awarded to students graduating from the College of Arts and Science, or from the College of Agriculture who have completed in a satisfactory manner a

minimum of eleven units of professional work in the College of Education.

4. A diploma entitling the holder to a State Teacher's certificate of Grammar Grade is awarded to students who have completed in a satisfactory manner the work of the first two years in the College of Education.

THE MASTER'S DEGREE

Every applicant for the Master's Degree must file with the Registrar a formal application including a statement of the Bachelor's Degree acquired and the course of study proposed. This application must be approved by the major department or departments concerned, and upon acceptance by the Committee on Graduate Courses the applicant will be admitted to candidacy for the degree sought.

The course of study shall represent twenty-four units of graduate work. Graduate credit may be given, however, for Junior and Senior college courses, four units counting as three, or where a sufficient amount of additional work is done, for their full value. (But the total number of credits allowed for these courses shall not exceed one-half the total number of credits required for the degree.) At least two-thirds of the units must represent work done within the major department or major group; and no course may count toward the degree except with the approval of the major professor or professors and the Committee on Graduate Courses.

A thesis will constitute a part of the prescribed course of study. It should, ordinarily, represent an equivalent of six units. It shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Committee on Graduate Courses for their final approval at least three weeks before the date set for the conferring of the degree.

Candidates for the Master's Degree who have received their Bachelor's Degree from this University may receive permission to do one-half of their graduate work in some other college or university of recognized standing, but other candidates must complete a full year's residence at the University to obtain the degree.

The Master's Degree will be conferred only after an examination conducted by the candidate's instructors and such other examiners as the Committee on Graduate Courses may appoint. In case semester examinations are taken, the grade received will be averaged with the oral examination and the thesis. The Degree of Master of Arts is conferred upon students who

have received the Degree of Bachelor of Arts; the Degree of Master of Science upon those who have received either the Degree of Bachelor of Science or the Degree of Bachelor of Arts in science groups.

THE DEGREES OF MINING, MECHANICAL, ELECTRICAL, AND CIVIL ENGINEER

Upon the presentation of a thesis satisfactory to the Engineering Faculty, preceded by one year of graduate work in residence and two years of experience in responsible engineering positions, the Degree of Mining Engineer, Mechanical Engineer, Electrical Engineer, or Civil Engineer will be conferred upon candidates who have attained the Bachelor's Degree in this or some other institution of recognized standing.

For graduates of this University, one year of responsible engineering experience may, in certain cases, be substituted for the year of resident study.

Formal application for the Engineer's Degree must be filed with the Registrar and approved by the Engineering Faculty. But the direction of all graduate work shall belong to the Committee on Graduate Courses and the major department or departments concerned, and the same procedure shall be followed as for the Master's Degree.

The thesis shall have the general form prescribed for the Bachelor's thesis, and shall be presented to the Engineering Faculty for final approval at least three weeks before the date set for the conferring of the degree.

The diploma fee for the Master's Degree, or for advanced degree in Engineering, is five dollars.

THE COLLEGE OF ARTS AND SCIENCE

THE COLLEGE OF ARTS AND SCIENCE

FACULTY

ROBERT LEWERS.....Acting President; Professor of Elementary and International Law and Municipal Accounting
JOHN CALVIN WATSON....Dean; Professor of the Greek Language and Literature
JAMES EDWARD CHURCH, JR.....Professor of the Latin Language and Literature
LAURA DELAGUNA Professor of the Romanic Languages and Literature
JEANNE ELIZABETH WIER..... Professor of History and Political Science
PETER FRANDSEN.....Professor of Biology
ROMANZO ADAMS.....Professor of Economics and Sociology
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
GEORGE ORDAHL.....Professor of Education and Psychology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
REUBEN CYRIL THOMPSON.....Professor of the Latin and Greek Languages and Literature
J CLAUDE JONES Professor of Geology and Mineralogy
KATE BARDENWERPER Associate Professor of Home Economics
ALBERT ELLSWORTH HILL.....Associate Professor of the English Language and Literature
KATHERINE LEWERS Associate Professor of Freehand Drawing
GRACE ALICE DAY.....Supervisor of Training; Assistant Professor in the College of Education
ROSALIE POLLOCK.....Assistant Professor of Education
SILAS EARL ROSS.....Assistant Professor of Chemistry
PHILIP AUGUSTUS LEHENBAUER.....Assistant Professor of Botany and Horticulture
ELSIE SAMETH.....Instructor in Physical Education for Women
ARCHIBALD EDWARDS TURNER.....Instructor in Public Speaking
MARGARET ELIZABETH MACK.....Instructor in Biology
KATHERINE RIEGELHUTH.....Instructor in German
MAUDE A. DENNY.....Instructor in Music
SILAS CALVIN FEEMSTER....Assistant in History and Political Science

AIM

The aim of the College of Arts and Science is twofold:

1. To lay a foundation for the professions, both learned and technical, and

2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

ADMISSION REQUIREMENTS

For admission requirements, entrance subjects, and the number of credits belonging to each, see page 85 ff.

REQUIREMENTS FOR A BACCALAUREATE DEGREE IN ARTS AND SCIENCE[1]

In order to be recommended for the Degree of Bachelor of Arts or Bachelor of Science, a candidate must, first, have satisfied the requirements for entrance to the course of study leading to the degree sought; and, second, have gained credit in prescribed and elective courses aggregating 124 semester-units.[2] These units are to be distributed as follows:

1. Candidates for either degree, in addition to four units in either Military Science (men) or Physical Education (women), must take a minimum of six units in each of the following five subjects: English (English 1), Foreign Language (the minimum for those beginning a new language is ten units), History and Social Science, Mathematics, and a Laboratory Science. Credit in all of these subjects should be gained before the end of the Sophomore year.

2. Candidates for the Degree of Bachelor of Arts must elect additional courses in English, Foreign Language, or History and Social Science (chosen in any one, or distributed in any two or in all three of these subjects, as the student may desire) sufficient to make, including the requirements stated in (1), a minimum of forty units in this group of subjects.

3. Candidates for the Degree of Bachelor of Science must elect additional courses in either Mathematics or Science (or

[1]Students who entered the College of Arts and Science in 1913 or any earlier year will, if they desire, be admitted to candidacy for the Degree of Bachelor of Arts without the requirement of two years of Latin for entrance, and to candidacy for either degree without the requirement of six hours of credit in Mathematics taken in the University. If conformity to the new requirements in any other respect shall prove a source of serious inconvenience to students already admitted, further adjustment may be made. Students entering in 1914 and later should note carefully that the exemptions named above do not apply to them. They will be expected to satisfy all of the requirements for graduation here given.

[2]By a semester-unit is meant the equivalent of work demanded by a recitation or lecture course scheduled to meet one hour a week for one semester, or by a laboratory course scheduled to meet two and one-half hours a week for one semester.

in both, distributed as the student may desire) sufficient to make, including the requirements stated in (1) and the major described in (5), a minimum of sixty units in this group of subjects.

4. Candidates for the Degree of Bachelor of Arts must elect courses in a group of departments consisting of a major and one or two correlated minors, the total aggregating not fewer than thirty-six units of work designed primarily for Juniors and Seniors. Subject to the requirement of correlation, the group may be chosen from any departments in the College of Arts and Science. For a fuller description of the group requirement, see below.

5. Candidates for the Degree of Bachelor of Science must elect courses in a group of departments consisting of a major in Mathematics or Science, and one or two correlated minors in any departments in the College of Arts and Science, the total aggregating not fewer than thirty-six units of work designed primarily for Juniors and Seniors. For a fuller description of the group requirement, see below.

6. The remaining units necessary to make a total of 124 may be freely elected from any courses offered in the College of Arts and Science. Correlated work in other colleges of the University, not exceeding twelve units, may be offered in satisfaction of the requirements in the College of Arts and Science.

Students who satisfy the requirements for both degrees will be given whichever degree they prefer.

THE GROUP REQUIREMENT

The group must embrace two or three departments and must consist of courses aggregating not fewer than thirty-six units in courses designed primarily for Juniors and Seniors. Of these units not fewer than twelve nor more than twenty-four must be in one department, to be called the student's major department.

The combined work of the two or three departments should represent a unity of aim. The particular grouping, however, will depend upon the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
Language—Literature Group	*Social Science Group*
Greek, Latin, French, German, English	History, Law, Economics, Sociology

3	4
Biological Science Group	*Physical Science Group*
Zoology, Botany, Chemistry, Geology	Chemistry, Physics, Mathematics, Geology, Mineralogy

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may find it desirable to elect a considerable amount of history also. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a Science major will often find it profitable to have a good reading knowledge of French and German.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and of the Dean, change his course, choosing another major department or major and minor departments, as the case may be, provided he complies with all the requirements in the case of the new major and minor departments.

It is advisable that students should plan their work for the Junior and Senior years as early as the beginning of the Sophomore year, in order that the studies then elected may fit in with their later work.

THE HIGH-SCHOOL TEACHER'S CERTIFICATE

For the requirements for a High-School Teacher's Certificate, see page 124.

THE MASTER'S DEGREE IN ARTS AND SCIENCE

For the requirements for the Master's Degree, see page 100 ff.

THE COLLEGE OF AGRICULTURE

1. THE SCHOOL OF AGRICULTURE
2. THE SCHOOL OF HOME ECONOMICS
3. THE DIVISION OF AGRICULTURAL EXTENSION

THE COLLEGE OF AGRICULTURE

FACULTY

ROBERT LEWERS....Acting President; Professor of Elementary and International Law and Municipal Accounting
CHARLES S. KNIGHT.....Dean; Professor of Agronomy; Director of Agricultural Extension
LAURA DELAGUNA.....Professor of the Romanic Languages and Literature
PETER FRANDSEN.....Professor of Biology
SAMUEL BRADFORD DOTEN.....Professor of Entomology
MAXWELL ADAMS.....Professor of Chemistry
WINFRED BERDELL MACK.....Professor of Bacteriology and Veterinary Science
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
STERLING PRICE FERGUSSON.....Professor of Meteorology and Climatology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
FREDERICK WESTON WILSON.....Professor of Animal Husbandry
KATE BARDENWERPER.....Associate Professor of Home Economics
ALBERT ELLSWORTH HILL.....Associate Professor of the English Language and Literature
KATHERINE LEWERS.....Associate Professor of Freehand Drawing
GEORGE DELAFIELD POWERS....Assistant Professor of Mechanical and Electrical Engineering
SILAS EARL ROSS.....Assistant Professor of Soils and Agricultural Chemistry
PHILIP AUGUSTUS LEHENBAUER.....Assistant Professor of Botany and Horticulture
ALBERT WILLIAM PRESTON.....Assistant Professor of Mechanical Engineering
VERNER E. SCOTT.....Instructor in Dairying
ELSIE SAMETH.....Instructor in Physical Education for Women
ARCHIBALD EDWARDS TURNER.....Instructor in Public Speaking
MARGARET ELIZABETH MACK.....Instructor in Biology
KATHERINE RIEGELHUTH.....Instructor in German
JOHN BLAIR MENARDI, JR.....Assistant in Agronomy

AIM

The aim of the School of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operation of farming, gardening, and stock raising, but also to give such training in English, mathematics, and the sciences, as will furnish a well-rounded education.

EQUIPMENT

FARM—The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, affords a first-hand acquaintance with the problems and methods of practical agriculture and horticulture.

LIVE STOCK—The college herds kept upon the adjacent State Fair grounds contain high-class representation of Percheron horses, the leading dairy and beef breeds of cattle, the middle- and fine-wool breeds of sheep, and the leading breeds of hogs. In this department the college is particularly strong, few, if any, of the western colleges having a better equipment of farm animals.

DAIRY—The new two-story Dairy Building, equipped with the most up-to-date machinery and apparatus, furnishes the best opportunity for instruction in methods of handling milk and dairy products, as milk testing, butter-making, cheese manufacture, and the marketing of milk. The dairy herd of the Agricultural College gives opportunity for the study of dairy stock and milk production.

SHOPS—The shops for the teaching of wood-work and blacksmithing are equipped for the best of work. Arrangements have been made for the housing and use of the representative types of farm machinery used in the various field operations.

ADMISSION REQUIREMENTS

For admission requirements, entrance subjects, and the number of credits belonging to each, see page 85 ff.

REQUIREMENTS FOR A DEGREE IN AGRICULTURE

The Degree of Bachelor of Science in Agriculture is conferred upon students who have satisfactorily completed the full course of study aggregating 148 semester-units[1] in the School of Agriculture, as follows:

[1]Including four units in Military Science in the Freshman and Sophomore years.

SCHOOL OF AGRICULTURE

COURSE OF STUDY

FRESHMAN YEAR

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
English 1	..	3	English 1	..	3
Mathematics 1	..	3	Mathematics 3	..	3
Zoology 1	2	2	Botany 1	2	2
Agronomy 1	..	3	Animal Husbandry 1	..	3
Mechanic Arts 1 and 2	1	..	Mechanic Arts 1 and 2	1	..
Chemistry 3 and 4	2	2	Chemistry 3 and 4	2	2
Total		18	Total		18

SOPHOMORE YEAR

First Semester			*Second Semester*		
English 2a or 4	..	3	English 2b or 4	..	3
Chemistry 5	3	..	Chemistry 7	3	..
Animal Husbandry 4	..	4	Agronomy 6	..	3
Agronomy 4	..	3	Horticulture 1	1	2
Physics 1	1	3	Physics 1	1	3
Elective	..	1	Elective	..	2
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Animal Husbandry 22	..	2	Agronomy 23	..	4
Animal Husbandry 23	..	2	Chemistry 21 and 22	1	3
Civil Engineering 21	2	2	Civil Engineering 35	2	2
Dairying 22	3	1	Zoology 10	1	2
Chemistry 29	..	3	Elective	..	3
Elective	..	3			
Total		18	Total		18

SENIOR YEAR

First Semester			*Second Semester*		
Agronomy 27	2	3	Veterinary Science 22	..	3
Botany 26	2	1	Veterinary Science 23	2	..
Thesis	..	2	Agronomy 28	..	5
Elective	..	8	Thesis	..	2
			Elective	..	6
Total		18	Total		18

ELECTIVES

No subject required in the Agricultural Course may be taken as an elective during Freshman or Sophomore years.

SCHOOL OF HOME ECONOMICS

The School of Home Economics will be completely organized during the year and a four-year course leading to the Degree of Bachelor of Science in Home Economics offered. Pending this organization in its entirety, the course of study for the first year only is given, but the description of the courses to be offered in the four-year course in Home Economics is given in full under that heading. Announcement of the com-

plete course of study in Home Economics will be made by special bulletin during the year.

AIM

The aim of the School of Home Economics is not only to raise the ideals of home-making and housekeeping in the young women of Nevada, but to impart to them technical skill and knowledge necessary for the proper management of a household; to give to women a broad scientific training as well as general culture.

EQUIPMENT

The Department of Home Economics is located at present in the basement of Stewart Hall, where it occupies three large rooms—a kitchen with wood and coal range; a laboratory equipped with gas jets for individual practice, and a gas range for group work; a dining-room, also used for classes in Household Art; two pantries. The department possesses also a fireless cooker, food charts, and a good reference library in dietetics, hygiene, household science, house decoration, textiles, and economics, together with the leading magazines dealing with questions of interest to students of Home Economics.

SHORT COURSES

Short Courses in Home Economics will be given during the year. These courses will be announced later by special bulletin.

TWO-YEAR COURSE

Information regarding a two-year course to be offered in Home Economics will be given in announcements during the year.

REQUIREMENTS FOR A DEGREE IN HOME ECONOMICS

The requirements for the Degree of Bachelor of Science in Home Economics will be announced during the year in a special bulletin.

SCHOOL OF HOME ECONOMICS

COURSE OF STUDY[1]

FRESHMAN

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
English 1	..	3	English 1	..	3
German 1 or French 1	..	3	German 1 or French 1	..	3
Chemistry 1, 2, or 3, 4	2	2	Chemistry 1, 2, or 3, 4	2	2
Art 1	..	2	Art 1	..	2
Home Economics 1	2	1	Home Economics 2	2	1
Total		15	Total		15

[1]The Course of Study for the Sophomore, Junior, and Senior years will be announced later.

SHORT COURSES

Dairy Short Course, January 6 to February 13, 1915.
Farmers' Week, February 17 to 23, 1915.

The Winter Short Course in Dairying

The course is designed to meet the needs of dairymen and men intending to fit themselves for creamery and cheese-factory operators. In the short time given to this work one cannot expect to become sufficiently trained to undertake the management of a plant unless he has had previous experience. For the man who has had experience in butter-making or cheese-making, the dairy short course will be a valuable aid in clearing up many little difficulties which he has not been able to solve in his practical work. For the man who has had no experience, this course will aid in securing a position as second man in creameries, and after securing the position will aid him in more rapid advancement than he could otherwise expect.

While the six weeks' dairy course is intended primarily for creamery and cheese-factory operators, the farmers and practical dairymen can well afford to examine the program carefully, for the work given is largely along lines which would be useful to such persons. For the program and calendar of work offered in the Short Course in Dairying, see p. 140 ff.

Farmers' Week

From February 17 to February 23, 1915, there will be given a week for farmers. Announcement of program will be made through the columns of the local papers and a special bulletin.

Registration—Persons attending either the Dairy short course or Farmers' short course are expected to register at the Registrar's Office, Morrill Hall. Registration for the Dairy course should be made Wednesday forenoon, January 6. Registration for Farmers' Week should be made Wednesday forenoon, February 17.

Expenses—Room and board may be obtained at the Men's Dormitory, Lincoln Hall, at a cost of $5 per week.

Fees—There will be no fees in connection with either the Dairy course or the Farmers' Week.

AGRICULTURAL EXTENSION

For Agricultural Extension work, see page 40.

THE COLLEGE OF ENGINEERING

1. THE MACKAY SCHOOL OF MINES
2. THE SCHOOL OF MECHANICAL AND ELECTRICAL ENGINEERING
3. THE SCHOOL OF CIVIL ENGINEERING

THE COLLEGE OF ENGINEERING

FACULTY

ROBERT LEWERS....Acting President; Professor of Elementary and International Law and Municipal Accounting
JAMES GRAVES SCRUGHAM.....Dean; Professor of Mechanical Engineering
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
HORACE PRENTISS BOARDMAN.....Professor of Civil Engineering
LEON WILSON HARTMAN.....Professor of Physics
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
FRANCIS CHURCH LINCOLN.....Professor of Mining and Metallurgy
J CLAUDE JONES.....Professor of Geology and Mineralogy
ALBERT ELLSWORTH HILL.....Associate Professor of the English Language and Literature
KATHERINE LEWERS.....Associate Professor of Freehand Drawing
WALTER S. PALMER.....Assistant Professor of Mining and Metallurgy
GEORGE DELAFIELD POWERS.....Assistant Professor of Electrical Engineering
SILAS EARL ROSS.....Assistant Professor of Chemistry
ALBERT WILLIAM PRESTON.....Assistant Professor of Mechanical Engineering
ARCHIBALD EDWARDS TURNER.....Instructor in Public Speaking

AIM

The aim of the College of Engineering is to equip young men with such knowledge of mining, mechanical, electrical, and civil engineering as is essential for entrance into these professions. The technical courses of study are arranged and directed with the purpose of preparing them for immediate usefulness. The instruction is given both by lectures and recitations, supplemented by work in the drafting-room, field, laboratory, and shop.

EQUIPMENT

For a general description of the equipment of the College of Engineering, see Mackay Mining Building, Mechanical Building, Electrical Building, Chemistry Building, Labora-

tories for Geology and Mineralogy, Laboratories of the Mining Department, and the Chemical Laboratories, in the earlier part of this Register.

ADMISSION REQUIREMENTS

For admission requirements, entrance subjects, and the number of credits belonging to each, see page 85 ff.

REQUIREMENTS FOR A DEGREE IN ENGINEERING

THE BACCALAUREATE DEGREE

(1) The Degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the Degree of Bachelor of Science in Mechanical or Electrical Engineering, upon students who have satisfactorily completed the full course of study in the School of Mechanical and Electrical Engineering; (3) the Degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

In all the schools, however, the requirement of four units in Military Science must be met.

THE DEGREES OF MINING, MECHANICAL, ELECTRICAL, AND CIVIL ENGINEER

For the requirements for the Degrees of Mining, Mechanical, Electrical, and Civil Engineer, see page 100 ff.

COURSES OF STUDY

FRESHMEN, ALL SCHOOLS

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
English 1	..	3	English 1	..	3
Chemistry 3 and 4	2	2	Chemistry 3 and 4	2	2
Mathematics 7	..	3	Mathematics 7	..	3
Drawing 1 and 2	3	..	Drawing 3	2	..
Mechanic Arts 1, 2, and 3	2	..	Mechanic Arts 2, 3, and 4	2	..
Elective	..	3	Elective	..	4
Total		18	Total		18

NOTE—Freshmen in the School of Mines are required to elect Mineralogy 1 (2 credits) in the first semester, and Mineralogy 2 and 3 (4 credits) in the second semester.

SCHOOL OF MINES

SOPHOMORE YEAR

First Semester	LAB	LEC.	*Second Semester*	LAB.	LEC.
Geology 21	..	3	Geology 21	..	2
Chemistry 5	3	..	Chemistry 6	3	..
Mathematics 8	..	5	Mathematics 9	..	3
Physics 2 and 3	2	5	Physics 2 and 3	2	5
			Geology 24	1	..
			Elective	..	2
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Mining 31a and 32	1	1	Mining 31b and 32	2	1
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Geology 22 and 23a or 23b	1	2
Mathematics 20	..	3	Mathematics 20	..	3
Mathematics 21	..	2	Mining 27	..	2
Mining 27	..	2	Elective	..	3
Elective	..	3			
Total		18	Total		18

Summer School of Geology (Geology 26), 2 weeks.....2 credits
Summer School of Mine Surveying (Civil Eng. 32), 4 weeks....3 credits

SENIOR YEAR

First Semester			*Second Semester*		
Mining 21	..	4	Mining 22	..	4
Mining 23a	2	..	Mining 23b	2	..
Mining 28	..	4	Mining 29	..	4
Mining 30	2	..	Mining 30	2	..
Mining 36	..	1	Mining 36	..	1
Geology 25	..	3	Mining 40, Thesis	2	..
Civil Engineering 28	..	2	Elective	..	3
Total		18	Total		18

SCHOOL OF MECHANICAL AND ELECTRICAL ENGINEERING

SOPHOMORE YEAR

First Semester			*Second Semester*		
Mechanical Engineering 1	..	2	Electrical Engineering 1	..	2
Mechanic Arts 3	3	..	Mechanical Engineering 2	..	2
Physics 2 and 3	2	5	Mechanic Arts 3	2	..
Mathematics 8	..	5	Physics 2 and 3	2	5
Elective	..	1	Mathematics 9	..	3
			Drawing 4	2	..
Total		18	Total		18

JUNIOR YEAR

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
Electrical Engineering 21	..	3	Electrical Engineering 22	..	3
Mathematics 20	..	3	Mechanical Engineering 29	1	1
Mathematics 21	..	2	Mechanical Engineering 24	..	1
Drawing 25	2	..	Mathematics 20	..	3
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Drawing 26	3	..
Elective	..	2	Elective	..	2
Total		18	Total		18

SENIOR YEAR

First Semester			*Second Semester*		
Mechanical Engineering 25	..	4	Mechanical Engineering 27	..	2
Mechanical Engineering 26	..	2	Mechanical Engineering 28	1	1
Mechanical Engineering 30	1	1	Electrical Engineering 24	..	3
Electrical Engineering 23	..	2	Electrical Engineering 26	..	2
Civil Engineering 28	..	2	Drawing 27 or 28	2	..
Drawing 27	3	..	Mechanical Engineering 40 (Thesis)	..	2
Elective	..	3	Elective	..	5
Total		18	Total		18

SCHOOL OF CIVIL ENGINEERING

SOPHOMORE YEAR

First Semester			*Second Semester*		
Mineralogy 1	2	..	Physics 2 and 3	2	5
Physics 2 and 3	2	5	Mathematics 9	..	3
Mathematics 8	..	5	Electrical Engineering 1	..	2
Mechanical Engineering 1	..	2	Drawing 3a	1	..
Elective	..	2	Drawing 4	2	..
			Elective	..	3
Total		18	Total		18

JUNIOR YEAR

First Semester			*Second Semester*		
Civil Engineering 21	2	2	Civil Engineering 21	2	2
Civil Engineering 29	2	..	Civil Engineering 26	..	3
Mathematics 20	..	3	Civil Engineering 27	1	2
Mathematics 21	..	2	Mathematics 20	..	3
Electrical Engineering 21, or Geology 21	..	3	Mathematics 21	..	2
Elective	..	4	Elective	..	3
Total		18	Total		18

Summer School of Mine Surveying (Civil Eng. 32), 4 weeks....3 credits

SENIOR YEAR

First Semester	LAB.	LEC.	*Second Semester*	LAB.	LEC.
Civil Engineering 23	..	4	Civil Engineering 24	4	1
Civil Engineering 25	2	3	Civil Engineering 30	..	2
Civil Engineering 28	..	2	Civil Engineering 31	..	2
Civil Engineering 33	1	2	Civil Engineering 33	2	1
Civil Engineering 36	..	1	Civil Engineering 36	..	1
Elective	..	3	Civil Engineering 40, Thesis	..	2
			Elective	..	3
Total		18	Total		18

Engineering Society—For regular attendance at the meetings of the Engineering Society for two years and the preparation of four papers on engineering subjects under the supervision of members of the faculty of the College of Engineering, one credit will be given.

THE COLLEGE OF EDUCATION

THE COLLEGE OF EDUCATION

FACULTY

ROBERT LEWERS.....Acting President; Professor of Elementary and International Law and Municipal Accounting
JOHN CALVIN WATSON....Dean; Professor of the Greek Language and Literature
JAMES EDWARD CHURCH, JR.....Professor of the Latin Language and Literature
LAURA DELAGUNA.....Professor of the Romanic Languages and Literature
JEANNE ELIZABETH WIER....Professor of History and Political Science
PETER FRANDSEN Professor of Biology
ROMANZO ADAMS.....Professor of Economics and Sociology
MAXWELL ADAMS.....Professor of Chemistry
HERBERT WYNFORD HILL.....Professor of the English Language and Literature
LEON WILSON HARTMAN.....Professor of Physics
CARL ALFRED JACOBSON.....Professor of Agricultural Chemistry
CHARLES HASEMAN.....Professor of Mathematics and Mechanics
GEORGE ORDAHL..... Professor of Education and Psychology
HUGH LAFAYETTE APPLEWHITE.....Professor of Military Science and Tactics
REUBEN CYRIL THOMPSON.....Professor of the Latin and Greek Languages and Literature
J CLAUDE JONES.....Professor of Geology and Mineralogy
KATE BARDENWERPER.....Associate Professor of Home Economics
ALBERT ELLSWORTH HILL.....Associate Professor of the English Language and Literature
KATHERINE LEWERS.....Associate Professor of Freehand Drawing
GRACE ALICE DAY.....Supervisor of Training; Assistant Professor in the College of Education
ROSALIE POLLOCK.....Assistant Professor of Education
SILAS EARL ROSS.....Assistant Professor of Chemistry
PHILIP AUGUSTUS LEHENBAUER.....Assistant Professor of Botany and Horticulture
ELSIE SAMETH.....Instructor in Physical Education for Women
ARCHIBALD EDWARDS TURNER.....Instructor in Public Speaking
MARGARET ELIZABETH MACK.....Instructor in Biology
KATHERINE RIEGELHUTH.....Instructor in German
MAUDE A. DENNY Instructor in Music
SILAS CALVIN FEEMSTER....Assistant in History and Political Science

AIM

The general purpose of the College of Education is to organize and correlate the different forces of the University which may contribute to educational efficiency in the State of Nevada. This is done through the grouping of University courses, through the Training School, and through the Summer School.

THE TRAINING SCHOOL

The College of Education conducts its training school in connection with the Reno Public Schools, through the courtesy of the Board of Education and of City Superintendent of Schools B. D. Billinghurst. Each student participates in three distinct types of experience: (*a*) practice teaching in the various elementary school subjects; (*b*) observation of the work of the regular grade teachers; (*c*) taking full charge of a room during the absence of the regular teacher for periods varying from a half day to a week. All of this work is carefully planned and supervised.

ADMISSION REQUIREMENTS

For admission requirements, entrance subjects, and the number of credits belonging to each, see page 85 ff.

PROFESSIONAL TRAINING IN EDUCATION

The College of Education offers professional training to three classes of students:

1. Those taking a course of two years in preparation for teaching in the elementary schools.
2. Those taking the regular four-year courses in the College of Arts and Science or in the College of Agriculture in preparation for teaching in the high schools.
3. Those who have received the elementary certificate and who wish to take a degree in two more years with their major work in Education.

REQUIREMENTS FOR THE ELEMENTARY TEACHER'S CERTIFICATE

Diplomas entitling the holders to teacher's certificates of elementary grade in the State of Nevada will be given to students who satisfy the entrance requirements and, in addition to four units in Physical Education, complete the two years of work outlined in the table on the following page.

OUTLINE OF WORK REQUIRED FOR THE ELEMENTARY TEACHER'S CERTIFICATE

FIRST YEAR	*First Semester*	*Second Semester*
English 1	3	3
Education 1	3	3
Hygiene 1	3	3
Art 5a	1	1
Music 1	1	1
Elective	4	4
Total	15	15
SECOND YEAR		
Education 5	2	2
Education 3	5	5
Art 5b	1	1
Music 2	1	1
Elective	6	6
Total	15	15

REQUIREMENTS FOR THE HIGH-SCHOOL TEACHER'S CERTIFICATE

Diplomas entitling the holders to teacher's certificates of high-school grade in the State of Nevada will be given to students graduating from the College of Arts and Science or from the College of Agriculture who have credit in Psychology 1 and 3, six units, and the first semester of Education 3, five units. (Candidates for the High-School Certificate who wish also to satisfy the requirements for teaching in the elementary schools must have Hygiene 1, six units, Art 5a and b, four units, and Music 1 and 2, four units.) The order in which these courses should be taken is as follows:

Freshman year..... Hygiene 1, 6 units.
Sophomore year.....Psychology 1 and 3, 6 units.
Art 5a, 2 units.
Music 1, 2 units.
Junior year.....Art 5b, 2 units.
Music 2, 2 units.
Senior year.....Education 3 (first semester), 5 units.

For the group requirement in the College of Arts and Science, the major and at least one minor must be in subjects taught in the high schools.

Candidates for the High-School Certificate must register both in their own College and in the College of Education.

REQUIREMENTS FOR A BACCALAUREATE DEGREE IN EDUCATION

Students who have taken the Elementary Certificate and who wish to continue their work in Education may satisfy the requirements for a degree under the following conditions:

1. Such students, if they have not already done so, must obtain not fewer than six units of credit in each of the subjects of Foreign Language (ten units, if they begin a new language), History and Social Science, and Mathematics.

2. In their Junior and Senior years they must take a major in Psychology and Education, and at least one minor in another subject, the total aggregating not fewer than thirty-six hours of credit in courses designed primarily for Juniors and Seniors.

3. They must elect other courses in the College of Arts and Science sufficient to make a total of sixty hours of credit in the Junior and Senior years.

4. To students who satisfy the requirements stated above will be given the Degree of Bachelor of Science in Education.

SPECIAL COURSES

Special courses in music, drawing, and physical culture will be given for students who wish to prepare for such special work. Only persons who have natural aptitude for such work, and who have had some training in these subjects, will be permitted to undertake special courses. Any one desiring this work should communicate with the College of Education in advance.

CORRESPONDENCE COURSES

The courses in Education and Psychology may be taken by correspondence. Credit will be given according to the amount of work done. Teachers wishing to enroll should address

College of Education,
University of Nevada,
Reno, Nevada.

REQUIREMENTS FOR RECOMMENDATION IN HIGH-SCHOOL SUBJECTS

The minimum amount of work required in each of the following subjects in order to receive from the University a recommendation for teaching these subjects in high schools is as follows:

Mathematics—Eleven units, based on four years of high-school study, or seventeen units, based on two or three years of high-school study.

Latin—Fourteen units, including prose composition, based on four years of high-school study.

French—Courses 1, 2, 3, and 4, based on no entrance French.

German—Courses 1, 2, 4 and 5, based on no entrance German.

English—Eighteen units, based on three years of high-school work.

History—Courses 1 and 2 and further work amounting to eight units. This requirement will be reduced in the case of students whose high-school preparation is good.

Biology—Sixteen units, including Hygiene 1.

Physics—Twelve units, based on one year of high-school work.

Chemistry—Courses 2 and 4, based on one year of high-school work.

THE SUMMER SCHOOL

The Summer School of six weeks designed especially for teachers will be in session in 1915, probably from June 21 to July 30. For copies of the program, which, it is hoped, will be ready by March, or for further information, address

Dean of the College of Education,
University of Nevada,
Reno, Nevada.

For the courses of instruction offered in the Summer School in 1914, see page 147 ff.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

On the following pages, listed under the Departments to which they belong, are given all the courses in which instruction is offered by the University. The Departments are arranged in alphabetical order, as in the table below. If all the instruction given by a Department is intended for a particular College, this fact is indicated by the name of the College below the name of the Department. If certain courses offered by a Department are intended for a particular College, this fact is indicated by the name of the College following the number of the course. In all cases where no limitations of this character are found, it may be assumed that, so far as the curricula and regulations of the several Colleges permit election, the instruction offered is open to all qualified students of the University.

The numbers prefixed to the courses ordinarily denote the classes of students for whom the courses are intended, courses numbered from 1 to 20 being designed primarily for Freshmen and Sophomores, 21 to 40 for Juniors and Seniors, and 41 to 60 for graduate students.

DEPARTMENTS

Accounting
Agronomy
Animal Husbandry
Art
Botany
Chemistry
Civil Engineering
Dairy Husbandry
Drawing
Economics and Sociology
Education
Electrical Engineering
English Language and Literature
Entomology
French Language and Literature
Geology
German Language and Literature
Greek Language and Literature
History and Political Science
Home Economics
Horticulture
Hygiene
Latin Language and Literature
Law
Mathematics
Mechanical Engineering
Mechanic Arts
Meteorology and Climatology
Military Science and Tactics
Mineralogy
Mining and Metallurgy
Music
Physical Education for Women
Physics
Psychology
Spanish Language and Literature
Veterinary Science
Zoology

ACCOUNTING

PROFESSOR LEWERS

21. MUNICIPAL ACCOUNTING. This course is designed to give a comprehensive knowledge of state, county, and city accounting, and includes the analysis of government financial reports, the making of budgets for municipalities and institutions, and involves generally such a knowledge of public accounting as should be in the possession of every citizen. *Both semesters. Hours to be arranged. Two credits each semester.* 301 Morrill Hall. Professor Lewers.

22. COST ACCOUNTING. This course is designed to give the fundamental principles governing the cost of operating engineering projects, such as mines, irrigation works, street and road building, etc.; the cost of operating farms, dairies, cattle ranges, manufacturing plants, mercantile establishments, and in general all kinds of business projects. Students taking this course should have some knowledge of bookkeeping, but in case they have no such training, extra time will be taken to prepare them. *Both semesters. Hour to be arranged. One credit each semester.* 301 Morrill Hall. Professor Lewers.

Students who desire to take up bookkeeping, typewriting, or stenography, and who can do so without interfering with other studies, may do so, provided permission is given by the Registration Committee. Fee for typewriting, $1.

AGRONOMY

College of Agriculture

PROFESSOR KNIGHT
MR. MENARDI

1. ELEMENTARY AGRICULTURE. Introduction to Agronomy, Animal Husbandry, Dairying, and Horticulture. The soil—its formation, texture, plant-food requirements, moisture, tillage, and fertility; the plant—its relation to soil and climate, its propagation, growth, and cultivation, and the kinds of crops and their culture; the animal—its life, feeding, and breeding. *First semester. Hours to be arranged. Three credits.* 201 Stewart Hall. Professor Knight.

4. FARM CROPS I. Forage crops, legumes and grasses, the special uses of these crops as hay, soiling, silage, pasture, green manure, cover crops, etc.; the care and management of pastures; plan for the rotation of soiling crops; adaptation of grasses and other crops for growing under different climatic and soil conditions. Laboratory—the examination of samples

of the standard varieties of grasses, clovers, and other forage plants, the study of grass, clover, and alfalfa seeds with reference to quality, purity, and freedom from adulterants and weed seeds; the identification of seeds of noxious weeds which may be found in grass, clover, or alfalfa seed. *First semester. Hours to be arranged. Three credits.* 201 Stewart Hall. Professor Knight.

6. FARM MECHANICS. A course of instruction in the machinery of the farm. Construction and use of modern field machinery for tillage, seeding, and harvesting operations; general labor-saving machinery adapted to the different operations of farm work; farm motors, animal treadmill, water, gasoline, and electric engines; gasoline and steam tractors, farm pumps, wells, windmills, pressure water-systems. Usually a number of machines adapted for each of these purposes are available from a number of different manufacturers. Largely work in examining, setting up, testing, and operating the field machines named. *Davidson and Chase:* Farm Machinery and Farm Motors. *Second semester. Lectures, M.W.F.; Lab. 2–4:30. Three credits.* Professor Knight, Mr. Menardi.

23. FARM CROPS II. The principal cereal crops—corn, wheat, oats, barley, rye, rice, sorghum, etc. *Hunt:* Cereals of America. Laboratory—the study of the matured plant of the different varieties of grain, grasses, and alfalfa; the judging of grain and hay according to the commercial standards of perfection for pure-bred varieties; and the judging of alfalfa seeds. *Knight:* Judging and Commercial Grading of Small Grains and Hay. *Second semester. Hours to be arranged. Four credits.* 201 Stewart Hall. Professor Knight, Mr. Menardi.

27. FARM MANAGEMENT. The evolution of farming; the relation of capital and labor to farm management; the general management of implements and equipment; ownership versus rental of lands; the choice of a farm; systems of farming; farming compared with other lines of business; marketing problems; advertising; farm records and farm accounts; the management of fields, crops, and manures. *First semester. Hours to be arranged. Five credits.* 201 Stewart Hall. Professor Knight.

28. IRRIGATION. A brief review of the history of irrigation, the development of irrigation law, and the doctrine of appropriation. The principles of irrigation, the measurement of water on the farm, the duty of water. A study of the rela-

tion of rainfall, evaporation, and seepage to irrigation. The methods of irrigation as practiced in different parts of the country are taken up. *Mead:* Irrigation Institutions. *Wilson:* Irrigation Engineering. *Second semester. Five credits.* 201 Stewart Hall. Professor Knight, Mr. Menardi.

ANIMAL HUSBANDRY

College of Agriculture

PROFESSOR WILSON

1. BREEDS OF LIVE STOCK. The origin, development, characteristics, and uses of pure breeds of farm animals. For illustration, the animals of the University farm and other stock farms in the vicinity will be used, also lantern slides of typical animals of the various breeds. *Plumb:* Types and Breeds of Farm Animals. *Second semester. Hours to be arranged. Three credits.* Professor Wilson.

4. STOCK JUDGING. Practice in judging live stock, to gain familiarity with the points of excellence in the various breeds of farm animals. *Craig:* Judging Live Stock. *First semester. Hours to be arranged. Four credits.* Professor Wilson.

22. ANIMAL BREEDING. A discussion of the principles underlying the art of breeding, the aim of which is to develop, maintain, and improve the various breeds and types of farm animals and farm crops, studied with special reference to their application to breeding of farm animals. *First semester. Hours to be arranged. Two credits.* Professor Wilson.

23. FEEDING ANIMALS. The principles underlying, and problems connected with, the feeding of farm animals. *Smith:* Profitable Stock Feeding. *First semester. Hours to be arranged. Two credits.* Professor Wilson.

25. LIVESTOCK REGISTRATION. The details of registering pure-bred animals, including a study of the history of the recognized registry associations and the rules governing them; a study of pedigrees and how to keep herd records. *Second semester. Hour to be arranged. One credit.* Professor Wilson.

26. ADVANCED STOCK FEEDING. Lectures and laboratory, the laboratory to consist of actual feeding experiments with farm animals. *Second semester. Three credits.* Professor Wilson.

27. ADVANCED STOCK JUDGING. The judging of animals in classes, as at fairs and stock shows. Laboratory twice a week.

Prerequisite: Animal Husbandry 1 and 4. *Hours and credits to be arranged.* Professor Wilson.

ART

ASSOCIATE PROFESSOR LEWERS

1. ART. Drawing of antique, life, and still life. Painting from nature; landscape; still life, and life. Designing; color harmony; clay modeling. *Hours and credits to be arranged.* Physics Building. Associate Professor Lewers.

5a. TEACHER'S COURSE (College of Education). Pictorial representation of landscape, still life, and life, Designing; color harmony; clay modeling; perspective. Rudiments of mechanical drawing. History of art. *Both semesters. Hours to be arranged. One credit each semester.* Physics Building. Associate Professor Lewers.

5b. TEACHER'S COURSE (College of Education). Continuation of first year's course in all branches and its application to each grade in public-school work. *Both semesters. Hours to be arranged. One credit each semester.* Physics Building. Associate Professor Lewers.

BOTANY

PROFESSOR FRANDSEN
ASSISTANT PROFESSOR LEHENBAUER
MISS MACK

1. STRUCTURAL AND PHYSIOLOGICAL BOTANY. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to the environmental forces. Illustrated by lantern slides and demonstrations. *Second semester. 8–9, T. Th. Laboratory, 2–4:30, M. W. Four credits.* 301 Hatch Hall. Professor Frandsen, Miss Mack. Fee, $1; deposit, $2.

2. CRYPTOGAMIC BOTANY. A general résumé of plant life from the lowest to the highest forms; slime, moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horse tails, club mosses, conebearers, and flowering plants. *Prerequisite:* Botany 1. *First semester. Lectures, 9–10, T. Th. Laboratory, 2–4:20, T. Th. Four credits.* 202 Hatch Hall. Professor Frandsen, Miss Mack. Fee, $1; deposit $2.

3. COMPARATIVE HISTOLOGY OF PLANTS. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. *Prerequisite:* Botany 1 and 2. *First semester. Lectures, 9–10,*

M. W. Laboratory, 2–4:30, T. Th. Four credits. 202 Hatch Hall. Professor Frandsen, Miss Mack. Fee, $1; deposit, $2.

25. PHYSIOLOGICAL BOTANY. A course of experiments similar to that outlined in McDougal's Plant Physiology. *Prerequisite:* Botany 1, 2, and 3. *Second semester. Hours and credits to be arranged.* Professor Frandsen. Fee, $2; deposit, $2.

26. INDUSTRIAL BOTANY (College of Agriculture). The course is designed to give the student an intelligent knowledge of the sources and methods of production of the things of everyday life, such as coffee, cocoa, tea, rubber, cotton, rice, rope- and paper-making, etc. Poisonous plants and weeds as affecting conditions in Nevada. Important grasses and forage plants of the ranges. *First semester. Lectures and Laboratory. Three credits.* 303 Stewart Hall. Assistant Professor Lehenbauer.

40. RESEARCH COURSE. This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Both semesters. Hours to be arranged. Two credits each semester.* 303 Stewart Hall. Assistant Professor Lehenbauer.

CHEMISTRY

PROFESSOR ADAMS
PROFESSOR JACOBSON
ASSISTANT PROFESSOR ROSS

1. ELEMENTARY CHEMISTRY. Lectures and recitations on the elementary theories and principles of chemistry. Designed for students who have not presented matriculation chemistry. *Prerequisite:* High-School Physics. *Both semesters. Hours to be arranged. Two credits each semester.* 206 Chemistry Building. Assistant Professor Ross.

2. ELEMENTARY CHEMISTRY. A laboratory course to accompany Chemistry 1. *Both semesters, 2–4:30, M. T. Two credits each semester.* 101 Chemistry Building. Professor Adams, Assistant Professor Ross. Fee, $2.50 per semester; deposit, $5.

3. GENERAL INORGANIC CHEMISTRY. A lecture course for students who have completed Chemistry 1 and 2, or who have presented matriculation chemistry. *Both semesters, 9–10, T. Th. Two credits each semester.* 206 Chemistry Building. Professor Adams.

4. QUALITATIVE ANALYSIS. A laboratory course to accompany Chemistry 3. One hour each week will be devoted to explanation and discussion of the methods and principles of analytical work. Special students may elect to take this course without registering for Chemistry 3, but no credit toward graduation will be allowed for such work. *Both semesters, 2–4:30, W. Th. Two credits each semester.* 101 Chemistry Building. Assistant Professor Ross. Fee, $2.50 per semester; deposit, $5.

5. QUANTITATIVE ANALYSIS. Training in the general methods of manipulation will be given in gravimetric analysis. One hour of laboratory time each week will be used for lecture and classroom instruction. *Prerequisite:* Chemistry 3 and 4. *First semester, 2–4:30, Th. F.; 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams, Assistant Professor Ross. Fee, $2.50; deposit, $5.

5a. ELEMENTARY FUEL ANALYSIS (College of Engineering). Designed particularly for mechanical engineers. *First semester, 2–4:30, Th. One credit.* 102 Chemistry Building. Professor Adams, Assistant Professor Ross.

6. QUANTITATIVE ANALYSIS. Attention will be given primarily to volumetric analysis, but special determinations in analytical chemistry will be assigned to meet the demands of the individual students and the department in which the degree is sought. One hour of the laboratory time each week will be used for lecture and classroom instruction. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F.; 9–11:30, S. Three credits.* 102 Chemistry Building. Professor Adams, Assistant Professor Ross. Fee, $2.50; deposit, $5.

7. QUANTITATIVE ANALYSIS (College of Agriculture). Attention will be given primarily to the analysis of farm and dairy products, soils, fertilizers, stock foods, and waters. *Prerequisite:* Chemistry 5. *Second semester, 2–4:30, Th. F.; 9–11:30, S. Three credits.* 102 Chemistry Building. Assistant Professor Ross. Fee, $2.50; deposit, $5.

21. SOILS CHEMISTRY (College of Agriculture). A general lecture course developing the applications of mineralogy, geology, physics, and chemistry to soils, fertilizers, soil functions, and soil fertility, especially emphasizing the relation of soil conditions to crop production, the permanency of agricultural systems, and the practical uses of soils, and briefly reviewing the scientific literature on the subject. Assigned readings and

papers will be required at least every three weeks throughout the term. *Second semester. Hours to be arranged. Three credits.* Chemistry Building. Assistant Professor Ross.

22. SOILS CHEMISTRY (College of Agriculture). A laboratory course to accompany Soils Chemistry 21. *Second semester. Hours to be arranged. One credit.* 101 Chemistry Building. Assistant Professor Ross. Fee, $2.50; deposit, $5.

23. SOIL FERTILITY (College of Agriculture). A laboratory course of two divisions proposing to study the soil in the laboratory and the field, correlating crop production with the physical and chemical make-up of soils. Each division occupies one semester, the entire course requiring two semesters. *Three credits* will be given each semester when taken separately, but it is advisable that the course be taken in its entirety. This course is open to those of the Junior class who are qualified with gravimetric and volumetric chemistry. 101 Chemistry Building. Assistant Professor Ross. Fee, $2.50 per semester; deposit, $5.

24. INDUSTRIAL CHEMISTRY. A lecture course on the application of chemical principles to the industrial arts. The course includes the manufacture of acids, alkalies, cements, glass, pottery, explosives, dyes, sugar, soaps, paints, varnishes, and numerous other commercial compounds. *Both semesters. Hours to be arranged. Two credits each semester.* 206 Chemistry Building. Assistant Professor Ross.

25. TECHNICAL ANALYSIS. A laboratory course to accompany Chemistry 24. The analysis of certain commercial products adapted to the requirements of the individual student. *First semester. Hours to be arranged. Two credits.* Chemistry Building. Professor Adams, Assistant Professor Ross. Fee, $2.50; deposit, $5.

26. ELECTRO-CHEMISTRY. Principles and practice of Electro-Chemistry, in relation to their application to purely scientific as well as technical chemistry. *Second semester, 2–4:30, M. W. Two credits.* 206 Chemistry Building. Professor Adams, Assistant Professor Ross. Fee, $2.50; deposit, $5.

27. ORGANIC CHEMISTRY. Lectures on the carbon compounds. *Prerequisite:* Chemistry 3 and 4. (Given in alternate years with Chemistry 46 and 47.) *Both semesters, 10–11, T. Th. Two credits each semester.* 206 Chemistry Building. Professor Jacobson.

28. ORGANIC CHEMISTRY. A laboratory course given in con-

nection with Chemistry 27. *Both semesters, 2–4:30, M. T. Two credits each semester.* 202 Chemistry Building. Professor Jacobson. Fee, $2.50 per semester; deposit, $5.

29. AGRICULTURAL CHEMISTRY (College of Agriculture). A lecture course in chemistry with special reference to agricultural problems and analysis. *Prerequisite:* Chemistry 7. *First semester. Hours to be arranged. Three credits.* 206 Chemistry Building. Assistant Professor Ross.

30. ADVANCED AGRICULTURAL CHEMISTRY (College of Agriculture). Essentially a laboratory course in which special problems of agricultural and food chemistry are taken up. *Prerequisites:* Chemistry 7 and 27. *Both semesters. Hours to be arranged. Two credits each semester.* 205 Chemistry Building. Professor Jacobson. Fee, $2.50 per semester; deposit, $5.

40. THESIS COURSE. Laboratory and library work on a special problem for research work to be chosen by the student in consultation with the instructors. *Prerequisites:* Chemistry 6, 27, and 28. *Second semester. Hours and credits to be arranged.* Chemistry Building. Professors Adams and Jacobson, Assistant Professor Ross. Fee, $2.50 per semester.

44. PHYSICAL CHEMISTRY. A lecture course correlating facts and theories concerning chemical reactions, solutions, vapor tension, osmotic pressure, viscosity, polarimetry, electrical conductivity, thermo-chemistry, chemical dynamics, equilibrium, and related phenomena. *Prerequisites:* Chemistry 27 and 28, and Physics 3. *Both semesters. Hours to be arranged. Two credits each semester.* 206 Chemistry Building. Professor Jacobson.

45. PHYSICAL CHEMISTRY. A laboratory course to accompany Chemistry 44. *Second semester. Hours to be arranged. Two credits.* 205 Chemistry Building. Professor Jacobson. Fee, $2.50; deposit, $5.

46. HISTORY OF CHEMISTRY. A lecture course on the history and development of the science of Chemistry. (Given in alternate years with Chemistry 27.) *First semester, 9–10, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

47. ADVANCED ORGANIC CHEMISTRY. A lecture course on special chapters in organic chemistry. (Given in alternate years with Chemistry 27.) *Prerequisite:* Chemistry 27, 28, and German 2. *Second semester, 10–11, T. Th. Two credits.* 206 Chemistry Building. Professor Adams.

60. THESIS COURSE FOR GRADUATE STUDENTS. Special prob-

lems for research chosen in consultation with some member of the department, and carried on under his direction. No student will be admitted to this course who has not completed three years' work in Chemistry. *Hours and credits to be arranged.* Chemistry Building. Professors Adams and Jacobson. Fee, $2.50 per semester; deposit, $5.

CIVIL ENGINEERING

College of Engineering

PROFESSOR BOARDMAN

21. SURVEYING. The use and adjustment of the various kinds of instruments commonly used in surveying. Instruction is given in classroom, field, and drafting-room, in land surveying, topography, hydrography, mining, and city surveying. *Both semesters. Recitations or lectures, 1–2; field or drafting, 2–4:30, T. Th. Four credits each semester.* Electrical Building. Professor Boardman. Deposit, $5.

22. HIGHWAY ENGINEERING. The location, construction, and maintenance of highways. *Elective. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

23. STRUCTURAL ANALYSIS. Computation of stresses in the various types of roof and bridge trusses. Study of the development and adaptability of the different types. *First semester. Hours to be arranged. Four credits.* Electrical Building. Professor Boardman.

24. STRUCTURAL DESIGN. General features and detail of design, estimates of weight, and cost are studied. Actual plans of modern railway and highway bridges are critically examined. The student designs and makes complete drawings in accordance with specifications. *Second semester. Hours to be arranged. Drafting, four credits; lecture, one credit.* Electrical Building. Professor Boardman.

25. RAILROAD ENGINEERING. Lectures, recitations, and field work in railroad location and construction, involving survey, map, profile, and estimate of costs of a short line of new railroad. Lectures on the economic features of railroad location and construction. *First semester. Hours to be arranged. Field or drafting, 2–4:30, M. W. Five credits.* Electrical Building. Professor Boardman. Deposit, $5.

26. SEWERS. Sewerage and sewage disposal for towns and cities. *Second semester. Hours to be arranged. Three credits.* Electrical Building. Professor Boardman.

27. MASONRY CONSTRUCTION. The nature and properties of materials used, and methods of construction and design of masonry structures. Each student makes an original design and drawing for some masonry structure, and estimates its cost. *Second semester. Lecture, two credits; drafting, one credit.* Electrical Building. Professor Boardman.

27a. MASONRY CONSTRUCTION. Additional work, drafting, or laboratory testing. *Hours to be arranged. One to three credits, depending upon the time put in and the work done.* Electrical Building. Professor Boardman.

28. HYDRAULICS. A study of the principles of hydrostatics and hydraulics, the pressure and buoyancy of water, and the laws of its flow through openings and in channels of various kinds. *First semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

29. GRAPHIC STATICS. A study of the principles of graphic statics and their application in ascertaining the stresses in framed structures. *First semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

29a. GRAPHIC STATICS. Additional work in graphics of bridge trusses. *One to three credits, depending upon the work done.* Electrical Building. Professor Boardman.

30. WATER SUPPLY. A study of public water supplies and their sanitary features. Design and construction of collection and distribution systems. Costs. *Second semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

31. IRRIGATION ENGINEERING. A thorough study of the questions involved in the collection, storage, and distribution of water for irrigation purposes. *Second semester. Hours to be arranged. Two credits.* Electrical Building. Professor Boardman.

32. MINE SURVEYING. At the close of the college year the Junior Class in Surveying takes a four weeks' trip to some mining district of Nevada. Both underground and surface surveying are carried on and maps are made from these surveys. All the ordinary surveying operations that the mining engineer may be called upon to perform are practiced. *Four weeks. Three credits.* Professor Boardman.

33. REINFORCED CONCRETE. Its principles and applications. *First semester. Lecture, two credits; drafting, one credit. Second*

semester. Lecture, one credit; drafting, two credits. Electrical Building. Professor Boardman.

34. WATER POWER ENGINEERING. A study of the more important problems of water-power development including characteristics of hydraulic motors affecting design, selection, and installation. *Hours to be arranged. Three credits.* Electrical Building. Professor Boardman.

35. RURAL ENGINEERING (College of Agriculture). Road building and maintenance; small highway bridges and culverts; farm buildings and other structures; the use of concrete on the farm; farm sanitation. *Prerequisite:* Civil Engineering 21. *Second semester. Hours to be arranged. Lecture, two credits; laboratory, two credits.* Electrical Building. Professor Boardman. Deposit, $5.

36. ENGINEERING LITERATURE. Presentation and discussion of topics selected from current engineering literature. *Both semesters. Hours to be arranged. One credit each semester.* Professor Boardman.

40. THESIS. *Second semester. Hours to be arranged. Two credits.* Professor Boardman.

DAIRY HUSBANDRY

College of Agriculture

MR. SCOTT

1. GENERAL DAIRYING. A study of the composition of milk and butter fat, the various uses of milk, methods of handling, practice in testing. One lecture and two laboratory periods. *Second semester. Hours to be arranged. Three credits.* Dairy Building. Mr. Scott. *Wing:* Milk and Its Products. Fee, $1; deposit, $5.

21. CHEESE-MAKING. Practical work in making, curing, and judging cheddar cheese and foreign cheese. *Prerequisite:* Dairy Husbandry 1. One lecture and two laboratory periods. *Second semester. Hours to be arranged. Three credits.* Dairy Building. Mr. Scott. *Van Slyke:* Cheese-Making. Fee, $1; deposit, $5.

22. BUTTER-MAKING AND ICE-CREAM MAKING. Practical work in making butter and ice-cream, a study of the factors influencing yield and quality in butter, scoring of butter obtained from various creameries, and a study of the methods used in its manufacture. *Prerequisite:* Dairy Husbandry 1. One lecture and three laboratory periods. *First semester.*

Hours to be arranged. Four credits. Dairy Building. Mr. Scott. *Michaels:* Creamery Butter-Making. Fee, $1; deposit, $5.

23. CITY MILK SUPPLY. A study of dairy conditions in various parts of the United States. Practical work with the University herd and in local dairies. *Prerequisite:* Dairy Husbandry 1. Two lectures and one laboratory period. *First semester. Hours to be arranged. Three credits.* Dairy Building. Mr. Scott.

NOTE—Students electing courses 21, 22, or 23 will be required to purchase two white suits and keep them laundered. The cost of the suits will be approximately $2 each.

DAIRY SHORT COURSE

January 6 to February 13, 1915

Program

A. M.		
8:00–9:00	Monday and Wednesday	Dairy Bacteriology.
9:00–12:00	Monday	Dairy Laboratory.
8:00–12:00	Tuesday and Thursday	Butter-Making.
8:00–12:00	Wednesday and Friday	Cheese-Making
P. M.		
2:00–4:30	Monday	Dairy Bacteriology.
2:00–3:00	Tuesday and Thursday	Classwork Feeding of Farm Animals.
1:00–2:00	Wednesday and Friday	Lecture—Dairying.
2:00–4:00	Wednesday and Friday	Stock Judging.
A. M.		
8:00–12:00	Saturday	Boiler and Engine Laboratory

DAIRY BACTERIOLOGY: Professor Frandsen. There will be eight lectures in this subject given in approximately the following order:

1. Nature of bacteria.
2. Kinds of bacteria in milk, their origin and number.
3. Souring milk by desirable and undesirable bacteria.
4. Abnormal fermentations—slimy milk, blue milk, ropy milk, etc.
5. Role of bacteria in butter and cheese.
6. Diseases transmitted through milk.
7. Cleanliness in the dairy.
8. Methods of caring for milk, and bacteriological reasons therefor.

The laboratory work will be in the subjects covered by the lectures. Opportunity will be given for individual work in:

1. Examination of cultures, morphology of bacteria.
2. Examination of cultures of milk bacteria.
3–4. Determining number of bacteria in milk.
5. Examination of diseased milk bacteria and cultures.
6. Examination of tuberculosis, diphtheria, anthrax, etc.
7–8. Effect of cleanliness on number and kind of bacteria in milk.

DAIRY LABORATORY: Mr. Scott. The laboratory work will include:

1. Testing milk, cream, and skim milk for butter fat by means of the Babcock test.
2. Testing butter and cheese for moisture and salt.
3. Testing milk for casein and for acidity.
4. Use of the lactometer, determination of solids not fat in milk.
5. Testing the efficiency of separators.

BUTTER-MAKING: Mr. Scott. The aim in this course is, first, to teach how to make butter; second, to take up special problems such as the control of moisture and salt; the effect of high and low temperatures; the preparation, use, and effect of starters; pasteurization and its effect; scoring butter, etc.

CHEESE-MAKING: Mr. Scott. As in butter-making, the aim will be first to learn the process of cheese-making. Close watch will be kept by each student of all the processes in the manufacture of cheddar cheese, and before the end of the course each student will be expected to make up a vat of milk into cheese without any assistance or suggestions from the instructor.

FEEDS AND FEEDING: Professor Wilson. In this course a study will be made of the needs of various farm animals with special attention to the dairy cow. Various feeds will be studied and the principles of feeding discussed. Rations will be worked out and their nutritive ratio and value discussed.

DAIRY PROBLEMS: Mr. Scott. The lectures in dairying are intended to cover problems which arise in practical work. Much attention will be given to dairy arithmetic, which will include calculating dividends, overrun, yield, etc.

STOCK JUDGING: Professor Wilson. A study will be made in various types of farm animals with special attention to the dairy cow. A carefully prepared score card will be used to aid in picking out important points. The animals in the University herd will be used for study.

BOILER AND ENGINE WORK: Professor Scrugham. This work will be given by the Department of Mechanical Engineering. The aim is to give dairy students some ideas regarding firing a boiler and handling different types of engines.

LABORATORIES:

The Bacteriological Laboratory is situated in Hatch Station. The students of the short course will have access to the apparatus used by the regular classes in Biology.

Dairy—A laboratory situated in the new Dairy Building will be fitted up for the work in testing dairy products.

Butter and Cheese Laboratories—The basement of the new Dairy Building is occupied entirely by machinery for manufacturing dairy products. In the north end a good-sized refrigerating-room is situated, receiving its refrigeration from a 2½-ton ammonia compressor. The machinery which will be used in butter-making consists of clarifier, cream ripener, starter can, churn, and butter printer. The machinery used for cheese-making consists of clarifier, cheese vats starter can, and cheese press.

DAIRY PRODUCTS COMPETITION (to be held February 13, 1915, at 1:30 p. m.). All of the creameries and milk plants in the State are requested to send samples of butter, cream, or milk which will be scored and tested. The scores on these products will be published unless the exhibitor objects. While no premiums are offered, the dairymen of the State are earnestly requested to enter the contest and be present at the scoring. Any person wishing to enter the contest may send in his sample not later than the morning of February 13.

QUANTITY OF EXHIBITS REQUIRED: Milk and cream should be bottled in pint bottles and packed in boxes suitables for shipping. Two bottles shall constitute a sample. Butter samples should contain two 1-pound or 1½-pound prints and be boxed suitably for shipping. All express charges must be prepaid.

DAIRYMEN'S ASSOCIATION: On the same date as the dairy products contest, after the scoring is finished, an attempt will be made to organize a Dairymen's Association. It is believed that an association will be materially beneficial, and all persons interested in dairying are requested to attend this meeting.

DRAWING

College of Engineering

PROFESSOR SCRUGHAM
PROFESSOR BOARDMAN
ASSOCIATE PROFESSOR LEWERS
ASSISTANT PROFESSOR POWERS
ASSISTANT PROFESSOR PRESTON

1. FREEHAND DRAWING. Perspective sketches of machines; lettering; sketches of projections of machines. *First semester, 10–11, daily. Two credits.* Physics Building. Associate Professor Lewers.

2. MECHANICAL DRAWING. Plates, machine parts, etc. *First semester, Section 1, 9–10; Section 2, 10–11, daily. One credit.* Physics Building. Associate Professor Lewers.

3. ELEMENTARY MACHINE DESIGN. Drawing and design of machine parts, modern shop arrangement, etc. *Second semes-*

ter, 9–10 and 10–11, daily. Two or three credits. Assistant Professor Preston.

3a. TOPOGRAPHICAL DRAWING AND MAPPING. *Second semester. Hours to be arranged. One credit.* Electrical Building. Professor Boardman.

4. DESCRIPTIVE GEOMETRY. *Second semester, 8–9, daily. Two credits.* Assistant Professor Powers.

25. MACHINE DESIGN. *First semester, 2–4:30, M. W. F. Two or three credits.* Electrical Building. Professor Scrugham.

26. STEAM BOILER DESIGN. *Second semester, 2–4:30, M. W. F. Three credits.* Electrical Building. Professor Scrugham.

27. ADVANCED MACHINE DESIGN. *Both semesters, 2–4:30, M. W. F. One to three credits.* Electrical Building. Professor Scrugham.

28. ELECTRICAL DESIGN. *Second semester, 2–4:30, T. Th. F. One to three credits.* Electrical Building. Professor Scrugham.

ECONOMICS AND SOCIOLOGY

PROFESSOR ADAMS

NOTE—On account of the fact that Economics and Sociology are taken by different classes of students, it does not appear to be best to designate some courses as strictly Freshman and Sophomore Courses and others as Junior and Senior Courses. In the case of students who desire but one or two years of work in these subjects, it is better to postpone such work to the Junior year. Students desiring to do their major work in Economics and Sociology should begin their work during their first year in college. Students who choose law or history as a major study may find it advantageous to begin work in Economics at an early period in their course.

1. ECONOMIC HISTORY. An introductory study of the evolution of English and American industry and commerce. (Not given in 1914–15.) *Two credits.* 202 Stewart Hall. Professor Adams.

2. ECONOMIC GEOGRAPHY. A study of geographic conditions in relation to industry and commerce, followed by a special study of a few important typical countries. (Not given in 1914–15.) *Two credits.* 202 Stewart Hall. Professor Adams.

3. PRINCIPLES OF ECONOMICS. Lectures and text. *Both semesters. 9–10, M.W.F. Three credits each semester.* 202 Stewart Hall. Professor Adams.

4. RURAL ECONOMICS. A study of the economic and social aspects of farm life. *First semester. Hours to be arranged. Three credits.* 202 Stewart Hall. Professor Adams.

11. INTRODUCTION TO THE STUDY OF SOCIETY. The social nature of man. The nature of society. Social institutions.

First semester. Hours to be arranged. Three credits. Professor Adams.

12. THE FAMILY. *Second semester. Hours to be arranged. Three credits.* 202 Stewart Hall. Professor Adams.

21. PUBLIC FINANCE. Public expenditures, revenues, financial administration, and public debts. *First semester. Hours to be arranged. Three credits.* 202 Stewart Hall. Professor Adams.

22. MONEY AND BANKING. History and principles. Comparative study of monetary and banking systems. *Second semester. Hours to be arranged. Three credits.* 202 Stewart Hall. Professor Adams.

23. THE STATE IN RELATION TO INDUSTRY. A historical and critical study of various sorts of governmental activity in relation to industry. Present-day problems are considered. *Second semester.* (Not given in 1914–15.) *Two credits.* 202 Stewart Hall. Professor Adams.

24. THE AMERICAN TARIFF. A critical and historical study. *First semester.* (Not given in 1914–15.) *Two credits.* 202 Stewart Hall. Professor Adams.

25. HISTORY OF ECONOMIC THOUGHT. A critical review of the leading schools of economic thought since the Sixteenth Century. *First semester.* (Not given in 1914–15.) *Two credits.* Professor Adams.

28. ANCIENT ECONOMIC THOUGHT. *First semester. One credit.* Given in 1913–14. Professor Adams.

32. DELINQUENTS, DEPENDENTS, AND DEFECTIVES. A study of the causes and social treatment of criminals, paupers, and defectives. *Second semester. Hours to be arranged. Three credits.* Professor Adams.

33. SOCIAL ORGANIZATION. A study of types of social organization in relation to human nature, to modes of communication, and to stages of social evolution. *Second semester. Three credits.* (Not given in 1914–15.) Professor Adams.

34. PRESENT ECONOMIC AND POLITICAL PROBLEMS. (See History 34.)

40. RESEARCH COURSE. A study of a selected subject—ordinarily an investigation of an economic or sociological question of importance to Nevada. *Both semesters. Hours to be arranged. Credits according to work.* 202 Stewart Hall. Professor Adams.

EDUCATION

College of Education

PROFESSOR ORDAHL
ASSISTANT PROFESSOR DAY
ASSISTANT PROFESSOR POLLOCK

1. SCIENCE OF EDUCATION. This course is designed to give the background and scientific basis for practice work in Course 3 in Education. The first semester is devoted to the study of elementary principles of psychology in relation to education. In the second semester a more detailed study is made of the learning process. *Both semesters, 10–11, M. W. F. Three credits each semester.* 101 Stewart Hall. Professor Ordahl, Miss Day.

3. THEORY AND PRACTICE OF TEACHING. Practical work in teaching in the Reno Public Schools, together with correlated readings, lectures, observations of model lessons, class discussion, and private conferences.

(*a*) One hour daily throughout the year is devoted to practice teaching by every student. This includes four units of work, for periods of seven weeks each, in the following subjects: elementary school English, geography, history, arithmetic. Additional subjects may be arranged if desired. Carefully prepared general and daily lesson plans are submitted to the supervisor and regular grade teacher by the student-teacher before taking charge of a class. After each lesson the student-teacher meets the supervisor in private conference for criticism and suggestions.

(*b*) Two hours each week are spent by the class with the supervisor, observing lessons taught by the city teachers in the various elementary school subjects. These are made the basis of class discussions upon principles and methods of teaching.

(*c*) Three hours each week are devoted to the study of school problems, principles of teaching, and special methods in elementary school English, geography, history, and arithmetic, paralleling the practice teaching.

Only those students who show a disposition to do their best and who are able to achieve reasonable success in teaching will be permitted to continue in this course. From time to time the stronger students are given opportunity to test their power by substituting for the regular teachers in the city school in case of sickness. Upon such occasions the student assumes the entire responsibility of the work until the return of the regular teacher, unless this period exceeds one week. *Prerequisite:* Education 1. *Both semesters daily at hours to be*

arranged, and for practice teaching any hour not conflicting with other University duties. Five credits each semester. Miss Day.

5. CHILD AND ADOLESCENT PSYCHOLOGY. Lectures, readings, observation, and experiments. Development of the nervous system and growth of the body are traced in connection with mental development; the nature of childhood and adolescence is studied with special reference to its meaning to the teacher in the management and organization of school activities. *Prerequisite:* Education 1, or Psychology 1 and 2. *Both semesters, 10–11, T. Th. Two credits each semester.* 101 Stewart Hall. Professor Ordahl.

7. CHILD LITERATURE. The study of selected prose and poetry from literature written for and of children and child life. The purpose of the course is a better understanding of child nature through a psychological study of this type of literature. (Not given in 1914–15.) *Both semesters. Hours to be arranged. Two credits.* Assistant Professor Pollock.

8. NATURE STUDY. This course covers in a general way the fundamental principles of the natural sciences that are necessary for the successful teaching of nature study in the public schools. The course includes lectures, reports, field and laboratory work. *Both semesters. Lecture, 1–2, Th. One credit each semester.* 301 Hatch Hall. Miss Mack. Fee, $1 per semester.

9. SOCIAL INDUSTRIAL GEOGRAPHY. A study of the world from the industrial standpoint. A consideration of the causes which condition the success of a given industry; its effects on other industries, *e. g.*, commerce; its effects on the community and larger social groups. Lectures, reading, and field work. The field work consists of a concrete study of local industries and excursions to various centers of industry. *Both semesters. Hours to be arranged. Two credits each semester.* Assistant Professor Pollock.

21. EDUCATIONAL PSYCHOLOGY. This course deals with the development of the thought process, the formation of ideals, and the social nature of the pupils at different periods of development, together with a consideration of the most economical methods of learning. *Both semesters. Hours to be arranged. Two credits each semester.* 101 Stewart Hall. Professor Ordahl.

23. HISTORY OF EDUCATION. A study of the development of

educational ideals from the time of the Greeks and Hebrews to the present, with special reference to the forces which have operated in the evolution of the various historic ideals and practices. *Both semesters. Hours to be arranged. Three credits each semester.* 101 Stewart Hall. Assistant Professor Pollock.

EDUCATION

SUMMER SCHOOL FOR TEACHERS

June 22 to August 1, 1914

COURSES

1. EDUCATIONAL PSYCHOLOGY. This course will deal with the present-day problems of the schoolroom and society. Problems of school technique, management, and administration will be considered from the psychological point of view. Retardation, elimination, and vocational guidance will be among the topics treated. Professor Herbert Kimmel, University of Ottawa, Kansas.

2. CHILD STUDY. This course is designed to present the facts so far as they are known concerning the nature and development of the mind during the second period of the child's life. Special attention is given to the interpretation of these facts with reference to their practical significance to the teacher. Professor Kimmel.

3. READING. Problems involved in teaching reading throughout the grades, including the technique of phonics and other mechanical phases of the work, as well as interpretation and expression, will be studied from the teacher's point of view. Selections from the texts used in Nevada and others from standard literature will be studied and read aloud each day. Miss Day, University of Nevada.

4. REVIEW AND METHODS IN HISTORY. This course is a review of history for the grades. Aside from technical training in the methods of presentation, the teacher will receive training in searching out valuable material not found in the ordinary text-books, and in utilizing the material according to the nature and interests of the child. Miss Agnes Howe, San José Normal School.

5. REVIEW AND METHODS IN ARITHMETIC. A review of the principles and processes of arithmetic and a study of special methods of teaching the subject throughout the grades. Miss Howe.

6. GEOGRAPHY. A study of aims, materials, methods, and

underlying principles in a modern course of elementary school geography. A special study will be made of industrial geography and causal relationships, together with field excursions and demonstration lessons. Miss Day.

7. DRAWING. This course includes work with water-colors, pencil, crayons, and charcoal. The subjects studied are still-life, landscape, pose drawing, design, illustrative drawing, composition, and principles of perspective. The object is to enable the students to teach this subject as required in the elementary schools of Nevada. Miss Clara M. Hetschel, Chico Normal School.

8. INDUSTRIAL ARTS. A study of industrial arts as taught in the first six grades of the elementary school. The work will include paper-folding, construction work, and weaving for the first three grades, problems in pasteboard, wood, and textiles for the three succeeding grades. Miss Hetschel.

10. PENMANSHIP. An entire period daily, devoted to practice, aiming toward perfection of form, speed, and muscular movement. The aim of the course is to teach penmanship and to train teachers to teach penmanship to children. Miss Day.

11. MUSIC. A course in Public-School Music. Study of notation, sight singing, presentation of primary and grammar grade methods, musical interpretation. Mrs. Mertrude Hallock Wagner.

12. FOLK DANCING, GAMES, AND PHYSICAL EXERCISES. Suited to the needs of teachers in the elementary grades and rural schools. Will be given three periods a week throughout the session. Miss Day.

ELECTRICAL ENGINEERING

College of Engineering

PROFESSOR SCRUGHAM
ASSISTANT PROFESSOR POWERS

1. ELEMENTS OF ELECTRICAL ENGINEERING. Includes a discussion of the laws and properties of electric and magnetic circuits, followed by an introduction to the study of direct- and alternating-current machinery. *Second semester, 10–11, T. Th. Two credits.* Electrical Building. Professor Scrugham.

21. DIRECT-CURRENT MACHINERY. Fundamental principles, theory, characteristics, operation, and construction of dynamos, motors, storage batteries, etc., supplemented by laboratory

work. *First semester, 10–11, M. W. F. Three credits.* 101 Mechanical Building. Professor Scrugham.

22. ALTERNATING-CURRENT MACHINERY. Theory and application of single-phase and polyphase currents, induction and synchronous motors, etc. *Prerequisite:* Electrical Engineering 21. *Second semester, 9–10, M. W. F.* Electrical Building. Professor Scrugham.

23. ELECTRIC TRANSMISSION. Types and details of construction, transmission calculations, etc. *First semester, 10-11, T. Th. Two credits.* Assistant Professor Powers.

24. ELECTRIC RAILWAYS AND TRANSMISSION. Covers the construction, equipment, and operation of different types of electric roads, together with related problems of power transmission and generation. *Prerequisite:* Electrical Engineering 22. *Second semester, 9-10, M. W. F. Three credits.* Electrical Building. Assistant Professor Powers.

25. ELECTRICAL ENGINEERING LABORATORY. The use and care of electrical instruments. Tests of generators, motors, etc. *Both semesters, 1–4:30, M. One credit each semester.* Assistant Professor Powers.

26. ELECTRICAL ENGINEERING LABORATORY. A continuation of the preceding course, but dealing particularly with more advanced problems in alternating-current engineering. *Both semesters, 1–4:30, M. W. One to two credits each semester.* Electrical Building. Professor Scrugham, Assistant Professor Powers.

27. ELECTRIC-POWER PLANTS. A study of the principles involved in the generation, transmission, and transformation of electric current for commercial uses. This course is supplemented by visits to the various power plants in the vicinity of the University. *First semester, 10–11, T. Th. Two credits.* Electrical Building. Professor Scrugham.

ENGLISH LANGUAGE AND LITERATURE

PROFESSOR HILL
ASSOCIATE PROFESSOR HILL
MR. TURNER

0. COMPOSITION AND RHETORIC. A course designed for students who are not equipped to pursue English 1. *Both semesters. Hours to be arranged. No credits.* Mr. Turner.

1. COMPOSITION AND RHETORIC. The theory of rhetoric is developed from the study and analysis of English prose masterpieces, and the principles thus established are applied

in daily and weekly themes. *Both semesters. Section 1, 8–9, M. W. F.; section 2, 9–10, T. Th. S.; section 3, 10–11, M. W. F. Three credits each semester.* 203 Morrill Hall. Associate Professor Hill, Mr. Turner.

2a. ADVANCED COMPOSITION. The study and practice of exposition, description, and narration. *Prerequisite:* English 1. *First semester. Hours to be arranged. Two credits.* 203 Morrill Hall. Associate Professor Hill.

2b. ADVANCED COMPOSITION. The study and practice of one of the forms of discourse. *Prerequisite:* English 1 and 2a. *Second semester. Hours to be arranged. Two credits.* 203 Morrill Hall. Associate Professor Hill.

3. ARGUMENTATION. The discussion of the principles of argumentation. The preparation of briefs and the presentation of arguments. *Both semesters. Hours to be arranged. Two credits each semester.* Mr. Turner.

4. GENERAL HISTORY OF ENGLISH LITERATURE. A study of literary movements and the interpretation of representative authors. Lectures, assigned readings, and weekly themes. *Prerequisite:* English 1. *Both semesters, 9–10, M. W. F. Three credits each semester.* Mackay Mining Building. Professor Hill.

5. THE SHORT STORY. The study of the short story as a type, and practice in writing short stories. *Prerequisites:* English 1, 2a, and 2b. *Both semesters.* (Not given in 1914–15.) *Two credits each semester.*

6. PUBLIC SPEAKING. The study of the principles of effective speaking. Voice building. Gesture. The presentation of original speeches before the class, illustrating the different forms of public address. *Both semesters. Hours to be arranged. Two credits each semester.* Mr. Turner.

7. EXPRESSION. Oral interpretation of the best literature. Sight reading. Exercises in vocal culture, breathing, position, and gesture. *Both semesters. Hours to be arranged. One credit each semester.* Mr. Turner.

8. ADVANCED PUBLIC SPEAKING. The preparation and presentation of formal addresses. Lectures and required reading. *Prerequisite:* English 6. *Both semesters. Hours to be arranged. One credit each semester.* Mr. Turner.

ENGLISH LANGUAGE

27. CHAUCER. The Canterbury Tales. *Prerequisites:* English 1 and 4. (Not given in 1914–15.) *Three credits.*

29. OLD ENGLISH. Grammar and reading of simple prose

and verse. *Prerequisites:* English 1 and 4. *First semester, 2–3, M. W. F. Three credits.* Mackay Mining Building. Professor Hill.

30. BEOWULF. *Prerequisites:* English 1, 4, and 29. *Second semester, 2–3, M. W. F. Three credits.* Mackay Mining Building. Professor Hill.

33. EARLY MIDDLE ENGLISH. Grammar and reading of selections equivalent to Emerson's Middle English Reader. *Prerequisite:* English 4. *First semester. Hours to be arranged. Two credits.* Professor Hill.

34. MIDDLE ENGLISH METRICAL ROMANCES. Reading and discussion of the chief Middle English romances. *Prerequisites:* English 4 and 33. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Hill.

ENGLISH LITERATURE

25. LITERATURE OF THE NINETEENTH CENTURY. (1) General survey of the period. (2) Tennyson and Browning. *Prerequisites:* English 1 and 4. *Both semesters, 11–12, M. T. Th. Three credits each semester.* Mackay Mining Building. Professor Hill.

26. SHAKESPEARE. The interpretation of six plays. *Prerequisites:* English 1 and 4. (Not given in 1914–15.)

28. MILTON. Minor poems and Paradise Lost. *Prerequisites:* English 1 and 4. (Not given in 1914–15.)

31. THE MODERN DRAMA. Ibsen, Maeterlinck, Pinero, Shaw. (Not given in 1914–15.)

32. THE NOVEL. A rapid survey of the history and development of the novel, followed by a more thorough study of the Nineteenth Century novels. (This course alternates with 31.) *Hours and credits to be arranged.* Associate Professor Hill.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged with individual students. One credit each semester.* Library. Professor Hill.

ENTOMOLOGY

PROFESSOR DOTEN

(See Zoology 10.)

FRENCH LANGUAGE AND LITERATURE

PROFESSOR DELAGUNA

1. BEGINNING FRENCH. Drill in grammar and in translating simple English into French, and French into English.

Both semesters, 8–9, M. W. F. Three credits each semester. **101** Stewart Hall. Professor deLaguna.

2. SECOND-YEAR FRENCH. Translation of such texts as Daudet's Selected Stories, Dumas's Les Trois Mousquetaires, Fontaine's Douze Contes Nouveaux, La Fontaine's Fables, Fortier's Napoléon, Extraits de Mémoires et d'Histoires, and Herdler's Scientific French Reader. Advanced grammar and composition. *Prerequisite:* French 1, or two years of high-school French. *Both semesters, 9–10, M. W. F. Three credits each semester.* 101 Stewart Hall. Professor deLaguna.

NOTE—Students presenting French 1 and French 2 for entrance (equivalent to two years of high-school French) may take Junior and Senior courses during their earlier years.

21. HISTORY OF THE FRENCH NOVEL. Rapid reading of the masterpieces of French fiction: Balzac, Sand, Mérimée, Flaubert, Zola, Daudet, etc. Essays in French required on books read. *Prerequisites:* French 1 and French 2. *Both semesters. Hours to be arranged. Two credits each semester.* 101 Stewart Hall. Professor deLaguna.

22. FRENCH LITERATURE. Prose writers of the Seventeenth Century: Descartes, La Rochefoucauld, La Bruyère, Bossuet, Pascal, etc. Essays in French are required on authors studied. *Prerequisites:* French 1 and French 2. *Both semesters. Hours to be arranged. Two credits each semester.* 101 Stewart Hall. Professor deLaguna.

24. FRENCH POETRY. French poetry from Villon to recent times. A study of versification. Essays in French are required on authors studied. *Prerequisites:* French 1 and French 2. *Both semesters.* (Not given in 1914–15.) *Two credits each semester.* 101 Stewart Hall. Professor deLaguna.

25. MODERN FRENCH PROSE. Rapid reading of French prose, especially the Short Story. Essays in French required on texts read. *Prerequisites:* French 1 and French 2. *Both semesters.* (Not given in 1914–15.) *Two credits each semester.* 101 Stewart Hall. Professor deLaguna.

26. ADVANCED PROSE COMPOSITION. Arranged to accompany French 24 and French 25. *Prerequisites:* French 1 and French 2. *Both semesters.* (Not given in 1914–15.) *One credit each semester.* 101 Stewart Hall. Professor deLaguna.

30. ADVANCED CONVERSATION. Conversation based on French texts. Open to those who have had French 1 and French 2. Can be taken only in connection with French 21 and French 22, which courses it is designed especially to accompany. *Both*

semesters. Hours to be arranged. One credit each semester. 101 Stewart Hall. Professor deLaguna.

40. SEMINAR FOR MAJOR STUDENTS. Old French: grammar, phonetics, morphology, syntax. Reading: La Chanson de Roland, Aucassin et Nicolette, Chrétien de Troyes, Chevalier au Lyon, etc. *Both semesters. Hours to be arranged. One credit each semester.* 101 Stewart Hall. Professor deLaguna.

GEOLOGY

PROFESSOR JONES

21. GENERAL GEOLOGY. The first semester's work deals chiefly with the dynamic and structural aspects of the subject, being a general discussion of geological forces and their results. During the second semester an outline is given of the history of the earth, including diastrophic changes, stratigraphic relationships, and the description of the physical geography and life of the successive geological periods, with special reference to the North American Continent. Lectures and recitations. *First semester, 10–11, M. W. F. Three credits. Second semester, 10–11, M. F. Two credits.* Mackay Mining Building. Professor Jones.

22. ELEMENTARY PETROLOGY (College of Engineering). Lectures on the classification, characters, and origin of rocks. *Prerequisites:* Geology 21, Mineralogy 1, 2, and 3. *Second semester, 1–2, T. Th. Two credits.* Mackay Mining Building. Professor Jones.

23a. PETROGRAPHIC LABORATORY (College of Engineering). The study of rocks in the hand specimen. *Prerequisite:* Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30, T. One credit.* Mackay Mining Building. Professor Jones.

23b. PETROGRAPHIC LABORATORY (College of Engineering). The study of rocks in the hand specimen, and in thin section with the microscope. *Prerequisites:* Mineralogy 21 and 22, and Geology 21. Geology 22 should be taken concurrently. *Second semester, 2–4:30, T. One credit.* Mackay Mining Building. Professor Jones. Deposit, $5.

24. FIELD GEOLOGY (College of Engineering). Instruction in field methods, including the study and interpretation of topographic and geologic maps, with actual practice in the investigation of selected areas. Part of the time is devoted to the mapping of some area in the vicinity of the University.

Prerequisite: Geology 21. *Second semester, 10–11, M., and five Saturdays. One credit.* Professor Jones.

25. ECONOMIC GEOLOGY (College of Engineering). A general course treating the mode of occurrence, distribution, origin, and distinctive features of mineral deposits, with descriptions of typical examples from important mining regions. *Prerequisites:* Geology 21, 22, and 24. *First semester. Hours to be arranged. Three credits.* Mackay Mining Building. Professor Jones.

26. FIELD GEOLOGY (College of Engineering). Two weeks are spent during the summer vacation in the mapping and study of some selected area, preferably some mining camp where both the surface and underground geology may be investigated. A concise report of the work, together with well-kept field notes, a finished geological map, and cross-sections, is required of each member of the class. Occasional lectures on the theoretical aspects of the work are also given. *Prerequisites:* Geology 21, 22, and 24. *Two credits.* Professor Jones.

40. UNDERGRADUATE THESIS COURSE (College of Engineering). Original investigation of some geological problem. *Prerequisites:* Geology 21, 22, 23, 24, and 25, or equivalent training. *Both semesters. Hours and credits to be arranged.* Mackay Mining Building. Professor Jones.

60. GRADUATE COURSE (College of Engineering). The original investigation of geologic problems, with seminar for discussion of current geological literature and special topics. *Hours and credits to be arranged.* Mackay Mining Building. Professor Jones.

GERMAN LANGUAGE AND LITERATURE

MISS RIEGELHUTH

1. ELEMENTARY GERMAN. Pronunciation, accidence, and rules of syntax, with reading of prose and translation of short sentences into German. The basis for the study of grammar is Thomas's Practical German Grammar. *Both semesters. Hours to be arranged. Three credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

2. NARRATIVE PROSE. Reading of selected narrative prose. Study of word formation, syntax, memorizing of idioms, and the translation of easy English prose into German. Such authors as Wildbrandt, Eichendorf, and Gerstäcker will be read. *Prerequisite:* German 1, or two years of high-school German. *Both semesters. Hours to be arranged. Three credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

3. AN INTRODUCTION TO THE CLASSICS. Study of the lives of Lessing, Schiller, and Goethe. Reading of representative works. Composition based on text read. *Prerequisite:* same as for German 2. *Both semesters. Hours to be arranged. Three credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

10. SCIENTIFIC GERMAN. Reading of scientific prose. Composition and exercises. *Prerequisite:* German 1, or two years of high-school German. *Both semesters. Hours to be arranged. Two credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

22. THE GERMAN NOVEL. Criticisms and themes. Such authors as Riehl, Freytag, Fulda, and Hauff will be read. *Prerequisite:* German 2 or 3, or three years of high-school German. *Both semesters. Hours to be arranged. Three credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

23. HISTORY OF GERMAN LITERATURE. Collateral reading. Exercises and themes. *Prerequisite:* same as for German 22. 102 Stewart Hall. Miss Riegelhuth.

24. HISTORY OF XIX CENTURY DRAMA. Study of Witowski's work and a consideration of Freytag's "Technique of the Drama." Collateral reading. Such authors as von Kleist, Hebbel, Wagner, and Sudermann will be read. *Prerequisite:* German 22 or 23, or four years of high-school German. *Both semesters. Hours to be arranged. Three credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

25. GERMAN POETRY. Study of the lyrics and ballads. Reading of important poems of such authors as Schiller, Scheffel, and Hauptman. *Prerequisite:* German 22 or 23. *Both semesters. Hours to be arranged. Three credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

40. STUDY AND INTERPRETATION OF GOETHE'S FAUST. Exercises and themes. This course is primarily for those majoring in German. It may be taken in addition to German 24 or 25, but cannot be substituted for either of them. *Both semesters. Hours to be arranged. Two credits each semester.* 102 Stewart Hall. Miss Riegelhuth.

GREEK LANGUAGE AND LITERATURE

PROFESSOR WATSON
PROFESSOR THOMPSON

1. ELEMENTARY. Grammar and exercises. An introductory course. *Both semesters. Hours to be arranged. Three credits each semester.* 202 Morrill Hall. Professor Watson.

2. XENOPHON. Anabasis, Books I–IV. Open to those who have taken Greek 1 or its equivalent. The successful completion of both courses will admit students to Greek 3. *Both semesters. Hours to be arranged. Three credits each semester.* 202 Morrill Hall. Professor Watson.

3. PLATO AND LYSIAS. Plato's Apology and Crito, and selected orations of Lysias. Open to those who have had Greek 1 and 2, and to those who have satisfied the entrance requirements in Greek. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

4. HOMER. Introduction to the grammar and prosody of Homer, and to the Ionic dialect, with reading of the Iliad, Books I–VI. *Second semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

5. GREEK PROSE COMPOSITION (first course.) A systematic study of Greek grammar, and the writing of sentences and simple connective narrative. Required of all Greek majors, and open to those taking Greek 3 and 4, and to those who have not already had Greek Composition and are pursuing any of the more advanced courses. *Both semesters. Hours to be arranged. One credit each semester.* 202 Morrill Hall. Professor Watson.

6. THUCYDIDES. ELEGIAC, IAMBIC, AND LYRIC POETS. Reading of Book I of Thucydides, followed by selections from the Elegiac, Iambic, and Lyric Poets. *First semester.* (Not given in 1914–15.) *Three credits.* 202 Morrill Hall. Professor Watson.

7. EURIPIDES AND SOPHOCLES. Introduction to Greek Tragedy, with reading of the Medea of Euripides and the Oedipus Tyrannus of Sophocles, and with some attention to their structure and meters. *Second semester. Hours to be arranged. Three credits.* 200 Stewart Hall. Professor Thompson.

8. GREEK PROSE COMPOSITION (second course). The writing of connected passages based upon authors already read, with special attention to the Greek verb. Open only to those who have taken Greek 5 or its equivalent. *Both semesters. Hours to be arranged. One credit each semester.* 202 Morrill Hall. Professor Watson.

21. GREEK LITERATURE—THUCYDIDES. The Sicilian Expedition, Books VI and VII, with some study of the historical and political aspects of the campaign. *First semester. Hours to be arranged. Three credits.* Professor Thompson.

22. GREEK LITERATURE—HOMER. Rapid reading of the greater part of the Iliad, with some attention to Homeric problems. *Second semester. Hours to be arranged. Three credits.* Professor Watson.

23. GREEK LITERATURE—DEMOSTHENES. Reading of the Oration on the Crown as a masterpiece of eloquence and with special reference to Demosthenes as an orator and statesman. *First semester. Hours to be arranged. Two credits.* Professor Watson.

24. GREEK LITERATURE—THE PASTORAL. Selections from Theocritus, Bion, and Moschus, with a study of the influence of these writers in the history of pastoral poetry. *Second semester. Hours to be arranged. Two credits.* Professor Watson.

25. GREEK LITERATURE—PLATO. Reading of the greater portion of the Republic of Plato, with a brief study of the History of Ancient Philosophy. *First semester.* (Not given in 1914–15.) *Three credits.* Professor Watson.

26. GREEK LITERATURE—TRAGEDY. Reading of the Antigone of Sophocles, and the Prometheus Bound and the Agamemnon of Æschylus. Studies in the development of tragedy, and in the dramatic construction and presentation of the plays read. *Second semester.* (Not given in 1914–15.) *Three credits.* Professor Watson.

27. GREEK LITERATURE—HERODOTUS. The Persian Wars, Books VI–IX, with due attention to their historical and military aspects. *First semester.* (Not given in 1914–15.) *Two credits.* Professor Watson.

28. GREEK LITERATURE—HOMER. Rapid reading of large portions of the Odyssey, with study of literary influence of the Homeric Epics. *First semester.* (Not given in 1914–15.) *Two credits.* Professor Watson.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged. One credit each semester.* Professor Watson.

HISTORY AND POLITICAL SCIENCE

PROFESSOR WIER
MR. FEEMSTER

ADVICE AS TO CHOICE OF COURSES. The Departments of History and Political Science, and Economics and Sociology are closely interrelated. The subjects offered are of especial importance to students who intend to engage in law, business, public service, journalism, the work of charities and correction, or to give instruction in any one of the social sciences. A student who is interested in history should be familiar with at least the elements of the other subjects of this group. A student who is majoring in history should have more than the elements of the other subjects.

The plan of the History Department is to furnish general courses covering long his-

torical periods and a limited number of courses on special fields. Courses 1 and 2 serve as an introduction to all other work and are also particularly suited to the needs of students who do not intend to specialize in History.

1. BEGINNINGS OF WESTERN CIVILIZATION. The growth of western civilization from the earliest times through the mediæval period. An introduction to the study of universal history, designed to afford training in method and also to furnish perspective for more intensive courses in history, political science, economics, sociology, literature, and law. *Both semesters, 9–10, M. W. F. Three credits each semester.* 100 Stewart Hall. Professor Wier.

2. MODERN EUROPE. A general course with emphasis upon the change from the absolutism of the Old Régime to the democracy and individualism of the Nineteenth Century. Open to students who have had Course 1 or a satisfactory equivalent. *Both semesters, 10–11, M. W. F. Three credits each semester.* 103 Stewart Hall. Mr. Feemster.

3. WOMAN IN HISTORY. A study of the position and influence of woman in various ages and among different nations will be followed by lectures upon the vocations now open to women and the significance of college education in preparation for the same. Lectures on various vocations will be given by representatives of these vocations and professions. Especially designed with reference to the needs of Freshmen women, but open to all women students. *Both semesters, 3, M. One credit each semester.* 100 Stewart Hall. Professor Wier.

4. AMERICAN HISTORY. A general course covering the chief facts of United States History. Designed for candidates for the elementary teacher's certificate. Not recommended for those intending to do intensive work in History and Economics. *Both semesters. Hours to be arranged. Three credits each semester.* 103 Stewart Hall. Mr. Feemster.

20. HISTORICAL METHOD. A study of the development of historical scholarship, followed by a survey of the sciences auxiliary to history and of the materials and processes of historical writing. Designed for advanced and graduate students specializing in history. *First semester. Hour to be arranged. One credit.* 100 Stewart Hall. Professor Wier.

21. THE TEACHING OF HISTORY. A study of the aims, methods, and materials for history teaching in secondary schools and colleges. Open only to history specialists who have taken Course 20. *Second semester. Hour to be arranged. One credit.* 100 Stewart Hall. Professor Wier.

22. THE ANCIENT WORLD. A study of the rise of the institutions of civilization, of nationality, and of empire culminating in imperial Rome. This course is designed for those preparing to teach history or Latin, for classical students, and for all who desire a collegiate course in ancient civilization. *Both semesters. Hours to be arranged. Two credits each semester.* 103 Stewart Hall. Mr. Feemster.

23. THE CONSTITUTIONAL AND POLITICAL HISTORY OF ENGLAND TO 1485. This course is important as a preparation for the study of law. *Both semesters. Hours to be arranged. Two credits each semester.* 103 Stewart Hall. Mr. Feemster.

25. THE CONSTITUTIONAL AND POLITICAL HISTORY OF THE UNITED STATES, 1775–1840. A detailed study of the political and constitutional questions arising during the formation of the Union. (Not given in 1914–15.) *Both semesters. Three credits each semester.* 103 Stewart Hall. Mr. Feemster.

26. WESTWARD EXPANSION OF THE UNITED STATES. A study of the westward movement from the Atlantic to the Pacific and of the continuous influence of the West upon national and international affairs. Particular attention will be given to the political, economic, and social aspects of the occupation of the various sections. (Not given in 1914–15.) *Both semesters, 9–10, T. Th. Two credits each semester.* 100 Stewart Hall. Professor Wier.

27. HISTORY OF NEVADA. Lectures on the political and constitutional history of the State. *Free elective for all students. Both semesters.* (Not given in 1914–15.) *One credit each semester.* 100 Stewart Hall. Professor Wier.

28. RESEARCH COURSE IN NEVADA HISTORY. Limited to ten students. *Both semesters. Hours to be arranged. One credit each semester.* History Seminar Room.

29. THE FRENCH REVOLUTION. Its causes and constitutional experiments. Studied from the European and American standpoint rather than as a French local crisis. *Both semesters, 9–10, T. Th. Two credits each semester.* 100 Stewart Hall. Professor Wier.

30. HISTORY OF THE PACIFIC SLOPE. Complementary to Course 26. (Not given in 1914–15.) *Both semesters. Two credits each semester.* 100 Stewart Hall. Professor Wier.

31. PRINCIPLES AND PRACTICE OF POLITICS. Intended primarily for Juniors and Seniors, but open to Freshmen and Sophomores with permission of the instructor. *Both semesters,*

8–9, T. Th. Two credits each semester. 103 Stewart Hall. Mr. Feemster.

32. COLONIAL GOVERNMENT. A study of the present government and administration of the colonies of the United States and other countries. *Both semesters.* (Not given in 1914–15.) *Two credits each semester.* 100 Stewart Hall. Professor Wier.

33. RESEARCH COURSE IN POLITICAL SCIENCE. Thesis course for students who may wish to contest for the Philo C. Bennett prize on "The Principles of Free Government." Open to Freshmen and Sophomores by permission. *Both semesters. Hours to be arranged. One credit each semester.* 100 Stewart Hall. Professor Wier.

34. PRESENT ECONOMIC AND POLITICAL PROBLEMS. A course given jointly by the Department of History and Political Science and the Department of Economics and Sociology. *Prerequisite:* History 1. *Both semesters. Hours to be arranged. One or two credits each semester.* 100 Stewart Hall. Economic Problems, Professor Adams; Political Problems, Professor Wier, Mr. Feemster.

40. HISTORY SEMINAR. *Both semesters. Hours to be arranged. One credit each semester.* Seminar Room. Professor Wier.

Fee for History Syllabus, 25 cents to $1 per semester, according to work being done.

HOME ECONOMICS

ASSOCIATE PROFESSOR BARDENWERPER

1. ELEMENTS OF HOME ECONOMICS (College of Agriculture). Fuels, application of heat to food materials; composition, source, and available power for household use. Composition, digestibility, food and money values of vegetables, cereals, breads, and meats. Losses in preparation and cooking. Preparation of meals, calories being carefully noted. Laundering: instruction is given in the principles of laundering, removing stains; dyeing and bleaching; a study of the chemicals and machinery, starches, and bluings used in the laundry. Assigned readings. *One laboratory, two lecture periods. First semester. Hours to be arranged. Three credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

2. GARMENT MAKING (College of Agriculture). Fundamental principles of sewing, including the different stitches, hems, gussets, plackets, fastenings, and the various kinds of darn-

ing and patching, with the practical application of each in designing, drafting, cutting, and making of underwear. Lectures are given on the textiles—cotton, wool, silk, and linens; also the selection and purchasing of suitable materials. *One laboratory, two lecture periods. First semester. Hours to be arranged. Three credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

3. EXPERIMENTAL COOKING (College of Agriculture). Special attention is given to fruits and vegetables; making of jellies and fruit ices. Dangers from uncooked foods. Canning and preserving. Practice work in breads, with study of yeasts and doughs. Preparation of individual recipes. Outlines made of standard tests. *One laboratory, two lecture periods. Second semester. Hours to be arranged. Three credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

4. DESIGNING AND DRAFTING (College of Agriculture). Instruction is given in designing, drafting, fitting, and finishing a shirt-waist, suit, and thin gown. The lectures include talks and discussions on proper dress, style, neatness, and suitability to wearer, also a color study from nature in reference to harmony and color in dress; textiles: a study of cotton, linen, flax, and wool, and the manufacture of the different materials. The laboratory work includes the identification of fibers and substitute materials by means of the microscope, also chemical tests to determine the adulterations and admixtures of cloth. *One laboratory, two lecture periods. Second semester. Hours to be arranged. Three credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

5. FOOD VALUES (College of Agriculture). Food tests. Nutritive and money values of food stuffs; computation of dietaries; manufacture and marketing of foods; selection and purchase of household supplies; cuts of meats. Adulterations, substitutions, and preservatives; pure food laws. Practice work in cookery: invalid cookery, infant feeding. Discussions and papers on texts read. *One laboratory, two lecture periods. First semester. Hours to be arranged. Three credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

6. HOUSEHOLD MANAGEMENT (College of Agriculture). Arrangement and equipment for efficiency. Business methods applied to scientific housekeeping. Clean food. Purchasing and storing of supplies; modern conveniences; labor-saving appliances. Practice work in home cookery and table service. Computation of dietaries according to different incomes.

Requirements for efficient living: shelter, food, clothing, higher life. Emergencies; home care of the sick; care of the infant. Operating expenses. Readings and discussions. *One laboratory, three lecture periods. Second semester. Hours to be arranged. Four credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

7. ADVANCED DESIGNING AND DRAFTING (College of Agriculture). Instruction is given in the drafting of skirt patterns and the fitting and making of dress skirts and tailored skirts. The laboratory work includes practice in taking measures, drafting, and designing patterns. Lectures are given and research work required along the line of history of dress. *Two laboratory, two lecture periods. First semester. Hours to be arranged. Four credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

8. HOME SANITATION (College of Agriculture). General sanitary conditions from a practical and scientific standpoint; domestic architecture, plumbing, ventilation, furnishing; systematic planning of daily routine; methods of cleaning. Readings and discussions. *Three lecture periods. Second semester. Hours to be arranged. Three credits.* 1 Stewart Hall. Associate Professor Bardenwerper.

9. ADVANCED COOKERY (College of Agriculture). Study of German and French cookery; Spanish dishes. This course includes the arrangement of menus, cooking, and serving of breakfasts, luncheons, dinners, and suppers, with a study of preparation, garnishing, and serving. Chafing-dish course. Lectures on food combinations. Reading and papers on foreign and domestic household methods. *One laboratory, one lecture period. Both semesters. Hours to be arranged. Two credits each semester.* 1 Stewart Hall. Associate Professor Bardenwerper.

10. CAMP COOKERY. Open to men students. *One lecture, one laboratory period. Both semesters. Hours to be arranged. Two credits each semester.* 1 Stewart Hall. Associate Professor Bardenwerper.

11. ADVANCED DRESSMAKING (College of Agriculture). This course gives practice in the artistic side of line and decoration in dress; the use of commercial patterns; practice in cutting, fitting, finishing, and draping of such materials as silks, satins, chiffons, and laces. *Two laboratory periods. Second sem-*

ester. Hours to be arranged. Two credits. 1 Stewart Hall. Associate Professor Bardenwerper.

12. TEXTILES AND NEEDLEWORK. Practice in cutting, fitting, designing. Lectures and discussions on color, design, and material in relation to dress and home decoration. Hygienic and historic dress. *One lecture, one laboratory period. Both semesters. Hours to be arranged. One credit each semester.* 1 Stewart Hall. Associate Professor Bardenwerper.

13. PRACTICE WORK IN COOKERY. Food values; preparation of menus in accordance with dietetic and economic standards. Food tests. *One lecture, one laboratory period. Both semesters. Hours to be arranged. One credit each semester.* 1 Stewart Hall. Associate Professor Bardenwerper.

14. FANCY COOKING. Invalid cookery; chafing-dish course; cakes, pastry, confectionery. Food adulteration. *One lecture, one laboratory period. Both semesters. Hours to be arranged. One credit each semester.* 1 Stewart Hall. Associate Professor Bardenwerper.

15. HOUSEHOLD ADMINISTRATION. Lecture course designed especially for housekeepers. Scientific management, domestic architecture, convenience, economy, beauty, and sanitary conditions discussed; food: purity, economy, nutritive value, in health and disease, with reference to age; household problems. *One lecture, one laboratory period. Both semesters. Hours to be arranged. One credit each semester.* 1 Stewart Hall. Associate Professor Bardenwerper.

NOTE—Courses 10, 12, 13, 14, and 15 are arranged with special reference to students in the College of Arts and Science. The laboratory period is of necessity shortened, and but one credit is allowed for one lecture and one laboratory period. In the College of Arts and Science one credit only is given each semester for work in the Department of Home Economics, and no more than four credits will be accepted toward a degree.

Fee for cooking, $1; for sewing, $1 per semester.

HORTICULTURE

College of Agriculture

ASSISTANT PROFESSOR LEHENBAUER

1. GENERAL HORTICULTURE. A general résumé of all branches of horticulture, including floriculture, gardening, fruit-growing, the making of lawns, planting of ornamental trees and shrubs, and the beautifying of the home and farm grounds. *Lectures and practicums in Greenhouse and on College grounds. Second semester. Three credits.* 303 Stewart Hall. *Bailey:* Manual of Gardening. Assistant Professor Lehenbauer. Fee, $2.

HYGIENE

PROFESSOR FRANDSEN
MISS MACK

1. PHYSIOLOGY AND HYGIENE. Special attention will be given to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of some vertebrate. *Both semesters. Lectures, 8–9, T. Th. Laboratory, 2–4:30, F. Three credits each semester.* 301 Hatch Hall. Professor Frandsen, Miss Mack. Fee, $2 per semester; deposit, $2.

22. MICROBIOLOGY. Lectures and laboratory exercises on the morphology and life processes of the bacteria. *Prerequisites:* Hygiene 1, Botany 1, and Zoology 1. *First semester. Hours to be arranged. Four credits.* 301 Hatch Hall. Professor Frandsen, Miss Mack. Fee, $2; deposit, $2.

23. MICROBIOLOGY. A continuation of Hygiene 22, dealing with plant microbes other than bacteria, and with the protozoa. *Prerequisite:* Hygiene 22. *Second semester. Hours to be arranged. Four credits.* 301 Hatch Hall. Professor Frandsen. Fee, $2; deposit, $2.

LATIN LANGUAGE AND LITERATURE

PROFESSOR CHURCH
PROFESSOR WATSON
PROFESSOR THOMPSON

LATIN D. VERGIL. This course is intended for such students as present only three years of Latin at entrance, but wish to continue the study in the College. *Both semesters. Three credits each semester.* 200 Stewart Hall. Professor Thompson.

NOTE—A course in Cicero will be organized for students who present only two years of Latin, if a sufficient number apply for it.

1. CICERO. The De Senectute and Cicero's Letters. *First semester, 10–11, M. W. F. Three credits.* 200 Stewart Hall. Professor Thompson.

2. HORACE AND CATULLUS. Latin Lyric Poetry. *Second semester, 10–11, M. W. F. Three credits.* 200 Stewart Hall. Professor Thompson.

3. LATIN PROSE COMPOSITION. Required of all students who have elected Latin as their major department, or who seek recommendation as teachers of Latin. *Both semesters. Hours*

to be arranged. One credit each semester. 200 Stewart Hall. Professor Thompson.

4. LIVY. Selections from the First Decade. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

5. PLAUTUS AND TERENCE. The Mostellaria of Plautus, the Phormio of Terence; Comparative Classical Comedy; some study will also be made of vernacular Latin and English derivatives. *Second semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Watson.

6. LATIN PROSE COMPOSITION (second course). Designed particularly for teachers and for candidates for the Rhodes Scholarship. *Both semesters. Hours and credits to be arranged.* 202 Morrill Hall. Professor Watson.

7. ROMAN PRIVATE LIFE. Lectures and assigned readings. Illustrated. *First semester. Hours to be arranged. Two credits.* 200 Stewart Hall. Professor Thompson.

8. ROMAN PUBLIC LIFE. Lectures and assigned readings, with special reference to the authors read in school. *Second semester. Hours to be arranged. Two credits.* 200 Stewart Hall. Professor Thompson.

NOTE—Courses 7 and 8 may be taken in any year of college residence. A knowledge of Latin is not required for these courses.

9. SIGHT TRANSLATION. Reading and translation of easy selections at sight and with some attention to colloquial Latin. *Both semesters. Hours and credits to be arranged.* 200 Stewart Hall. Professor Thompson.

21. COMPARATIVE PASTORAL POETRY. Theocritus to Mantuan. *First semester. Hours to be arranged. Three credits.* 202 Morrill Hall. Professor Church.

22. ROMAN BURIAL INSCRIPTIONS, PROSE AND METRICAL. The study of the essential features of Roman religion and the rise of Christianity. *First semester.* (Not given in 1914–15.) *One credit.* 202 Morrill Hall. Professor Church.

23. LIVY XXI–XXII. The War with Hannibal. *Second semester. Hours to be arranged. Three credits.* 200 Stewart Hall. Professor Thompson.

24. THE ROMAN NOVEL. Petronius and Apuleius. *First semester. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Church.

25. GREEK AND ROMAN ART AND ARCHÆOLOGY. Illustrated by lantern slides and reproductions. *First semester. Hours to*

be arranged. Two credits. 202–203 Morrill Hall. Professor Church.

25a. RENAISSANCE AND MODERN ART. *Second semester. Hours to be arranged. Two credits.* 202 Morrill Hall. Professor Church.

26. PATRISTIC AND LATE LATIN; CHURCH HYMNS. *Second semester. Hours to be arranged. Two credits.* 206 Morrill Hall. Professor Church.

27. THE LATIN LANGUAGE. Its broader principles and relation to the Romanic languages. *Second semester. Hours to be arranged. One credit.* 202 Morrill Hall. Professor Church.

28. TEACHER'S COURSE. Methods and ideals in teaching Latin; practice teaching. *First semester. Hours to be arranged. Two credits.* 200 Stewart Hall. Professor Thompson.

29. ROMAN SATIRE. Horace, Juvenal, and Martial. *First semester.* (Not given in 1914–15.) *Three credits.* 200 Stewart Hall. Professor Thompson.

40. SEMINAR FOR UNDERGRADUATES. *Both semesters. Hours to be arranged. One credit each semester.* Library. Professor Church and Professor Thompson.

41. TACITUS. Annals. *First semester.* (Not given in 1914–15.) *Three credits.* 202 Morrill Hall. Professor Church.

42. ANCIENT CLASSICAL MYTHOLOGY. Its religious and literary forms. *Second semester. Hour to be arranged. One credit.* 202 Morrill Hall. Professor Church.

60. SEMINAR FOR GRADUATES. The Study of the Winds in Classical Poetry from Homer to Ovid. *Both semesters. Three credits.* Library. Professor Church and Professor Watson.

LAW

PROFESSOR LEWERS

21. ELEMENTARY LAW AND JURISPRUDENCE. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *First semester. Hours to be arranged. M. W. F. Three credits.* 301 Morrill Hall. Professor Lewers.

22. INTERNATIONAL LAW. The principles of International Law as set forth by the leading text-writers of America, England, and the Continent. *Second semester. Hours to be arranged. M. W. F. Three credits.* 301 Morrill Hall. Professor Lewers.

23. ADVANCED LAW. The object of this course is to give the citizen a broader view than that outlined in the above

courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins:* Law of Property. *McKelvey:* Evidence. *Prerequisites:* Law 21 and 22. *Both semesters. Hours to be arranged. M. W. F. Three credits each semester.* 301 Morrill Hall. Professor Lewers.

MATHEMATICS

PROFESSOR HASEMAN

1. ALGEBRA. A review of elementary algebra, quadratic equations, exponents and radicals, binomial theorem, mathematical induction, logarithms, progressions, determinants, theory of equations. *First semester, 1–2, M. W. F. Three credits.* 108 Morrill Hall. Professor Haseman.

2. SOLID GEOMETRY. The geometry of the plane, the cone, the prism, the pyramid, the sphere. *Second semester, 1–2, T. Th. Two credits.* 108 Morrill Hall. Professor Haseman.

3. PLANE TRIGONOMETRY. Special emphasis is placed upon the derivation of formulas and the reduction of trigonometric identities. Considerable time is devoted to the solution of triangles. *Second semester, 1–2, M. W. F. Three credits.* 108 Morrill Hall. Professor Haseman.

4. DESCRIPTIVE ASTRONOMY. A treatment of the facts and laws of astronomy with a study of the solar system, the stars, comets, etc. *Second semester, 10–11, T. Th. Two credits.* 108 Morrill Hall. Professor Haseman.

5. SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY. The solution of spherical triangles and the application of trigonometry to certain problems of practical astronomy. The theory and the use of the transit instrument. The determination of time, latitude, and longitude. *Second semester. Hours to be arranged. Two credits.* 108 Morrill Hall. Professor Haseman.

7. ALGEBRA AND ANALYTIC GEOMETRY. Thorough review of algebra and trigonometry; advanced algebra to suit the needs of the students; geometry of the point, straight line, transformation of coordinates, conic sections, and the general equation of the second degree. Some time will be spent on the analytic geometry of three dimensions. *Both semesters, 9–10, M. W. F. Three credits each semester.* 108 Morrill Hall. Professor Haseman.

8. DIFFERENTIAL CALCULUS. A thorough study of the fundamental principles of differential calculus with their application

to expansion in series, tangents and normals, curvature, indeterminant forms, maxima, and minima. Illustrative examples of a practical nature are emphasized. *First semester, 10–11, daily. Five credits.* 108 Morrill Hall. Professor Haseman.

9. INTEGRAL CALCULUS. Considerable time is given to methods of integration. This is followed by the application of integration to areas of curves, areas of surfaces, volumes, moments of inertia, and centers of gravity. *Second semester, 9–10, M. W. F. Three credits.* 108 Morrill Hall. Professor Haseman.

20. ANALYTIC MECHANICS (College of Engineering). Work in the resolution of forces, center of gravity, moment of inertia, laws of motion, friction, and dynamics of machinery. Emphasis is placed on practical numerical examples to illustrate the theory. *Both semesters, 8–9, M. W. F. Three credits each semester.* 108 Morrill Hall. Professor Haseman.

21. MECHANICS OF MATERIAL (College of Engineering). Application of the principles of statics to rigid bodies; elasticity and resistance of materials; discussion of beams and columns, forms of uniform strength, riveting, torsion of shafts. *Both semesters, 8–9, T. Th. Two credits each semester.* 108 Morrill Hall. Professor Haseman.

22. ENGINEERING MATHEMATICS (College of Engineering). A general course in mathematics especially designed for electrical engineering students. *Second semester, 8–9, T. Th. Two credits.* 108 Morrill Hall. Professor Haseman.

23. SOLID ANALYTICAL GEOMETRY. A study of the plane, ellipsoid, paraboloid, hyperboloid, and the general equation of the second degree in three dimensional spaces. *First semester, 1–2, T. Th. Two credits.* 108 Morrill Hall. Professor Haseman.

25. HISTORY OF ELEMENTARY MATHEMATICS. Lectures and assigned readings on the history of the mathematical science. *First semester. Hours to be arranged. Two credits.* 108 Morrill Hall. Professor Haseman.

26. THEORY OF NUMBERS. Lectures and reports. *First semester. Hours to be arranged.* 108 Morrill Hall. Professor Haseman.

28. DETERMINANTS AND THE THEORY OF EQUATIONS. The study of determinants with their applications. The theory of the quadratic, cubic, biquadratic, and the general algebraic

equation. Approximation methods of solving equations of higher degree than the second. *Either semester. Hours to be arranged. Two credits.* 108 Morrill Hall. Professor Haseman.

30. DIFFERENTIAL EQUATIONS. Study of the ordinary and partial differential equations of the first and second orders with special attention to geometrical and physical applications. *Both semesters. Hours to be arranged. Three credits each semester.* 108 Morrill Hall. Professor Haseman.

35. ADVANCED CALCULUS. A more rigorous study of the differential and integral calculus with extensive applications to geometrical and physical problems. *First semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Haseman.

40. THEORY OF FUNCTIONS OF THE COMPLEX VARIABLE. The fundamental operations applied to the complex number, the series, Riemann surfaces, etc. *Second semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Haseman.

45. VECTOR ANALYSIS. A study of the Vector notation applied to problems of physics. *Second semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Haseman.

50. HIGHER GEOMETRY. An elementary study of the higher plane curves and surfaces. *First semester. Hours to be arranged.* 108 Morrill Hall. Professor Haseman.

55. FOURIER'S SERIES AND FOURIER'S INTEGRALS. A study of a few of the more important partial differential equations of physics. Development of the function into cosine and sine series. *First semester. Hours to be arranged. Three credits.* 108 Morrill Hall. Professor Haseman.

60. SEMINAR. Library work and reports on various topics of mathematical interest. *Second semester. Hours to be arranged. Two hours.* 108 Morrill Hall. Professor Haseman.

For the benefit of students desiring to make mathematics their major or to take more advanced courses in mathematics, the following subjects will be offered at any time: Elliptic Integrals and Elliptic Functions, Differential Geometry, Partial Differential Equations, Calculus of Variations, Theory of Probabilities, and the Theory of Functions of a Real Variable.

MECHANICAL ENGINEERING

College of Engineering

PROFESSOR SCRUGHAM
ASSISTANT PROFESSOR POWERS
ASSISTANT PROFESSOR PRESTON

1. POWER AND POWER TRANSMISSION. A study of the operation and construction of steam, gas, and oil engines, turbines, water wheels, motors, etc., and the methods of power transmission. The subject is treated in a practical manner and illustrated by tests of various prime movers. *First semester, 1–2, T. Th. Two credits.* Electrical Building. Professor Scrugham.

2. KINEMATICS. The geometry of machinery, showing the laws which govern the velocity of moving parts, the correct forms of gear teeth, the manner of designing trains of mechanism. *Second semester, 1–4:30, F. Two credits.* Electrical Building. Assistant Professor Powers.

23. MACHINE DESIGN. The study of the application of the laws of velocity, force, and strength of materials to the design of machinery; tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. *First semester, 9–10, W. One credit.* Electrical Building. Professor Scrugham.

24. THEORY OF STEAM BOILERS. The design and construction of the various types of commercial steam boilers, their care, the consumption of fuel, the determining of the horsepowers of boilers, and the study of modern boiler plants. Each student is required to design a boiler or battery of boilers and the necessary fittings, and to prepare specifications and complete working drawings for the boiler-maker and the erecting engineer. *Second semester, 10–11, W. One credit.* Professor Scrugham.

25. THERMODYNAMICS. The principles involved in the design and construction of the steam engine, including theoretical indicator and crank-effort diagrams for various types of engines. This work is supplemented by experimental work in the laboratory. *First semester, 9–10, M. W. Th. F. Four credits.* 101 Mechanical Building. Assistant Professor Powers.

26. GAS ENGINES AND GAS PRODUCERS. The principles involved in the design and construction of gas and oil engines and gas producers. The composition of the hydrocarbon gases and oil is discussed, and comparative cost and efficiencies considered. *First semester, 8–9, M. W. Two credits.* Electrical Building. Assistant Professor Powers.

27. INDUSTRIAL ORGANIZATION AND MANAGEMENT. Covers principles of organization, systems of cost keeping, compensation of labor, etc., estimates, specifications, superintendence, etc. *Second semester, 9–10, T. Th. Two credits.* Professor Scrugham.

28. VALVE GEARING. A study of the various forms of engine valves, link motions, radical gears, and shaft regulation. Each student must design some form of standard engine valve and governor, the data being taken from trade catalogues and engines actually in use. *Second semester, 1–2, 2–4:30, Th. Two credits.* Electrical Building. Assistant Professor Powers.

29. SHOP MANAGEMENT. The economic elements in shop processes are studied. Each student is assigned a group of shop students whose work he must plan and see that the proper tools are provided. All operations are dispatched according to previously made time schedules covering the requirements of the job. *Either semester. Elective. 1–4:30. Days to be arranged. Two credits each semester.* Mechanical Building. Assistant Professor Preston.

30. ENGINEERING LABORATORY PRACTICE. This course covers the various methods of conducting and working up tests, determining efficiencies, driving powers, etc., and is supplemented by practical tests on a number of pieces of apparatus. *Both semesters. 1–2, 2–4:30. Days to be arranged. Two credits each semester.* 101 Mechanical Building. Assistant Professor Powers, Assistant Professor Preston.

31. AUTOMOBILE ENGINEERING. Engines, carbureters, magnetos, starters, lighting, gearings, and general construction, care, and upkeep. *Second semester. Hour to be arranged. One credit.* Assistant Professor Powers.

40. THESIS COURSE. The designing of a machine, or the original investigation of some subject congenial to the student's taste and included in the scope of curriculum. *Second semester. Hours to be arranged. Two credits.* 202 Mechanical Building. Professor Scrugham.

MECHANIC ARTS

College of Engineering

ASSISTANT PROFESSOR PRESTON
MR. BROWN

1. WOOD WORK. The students are taught the use of hand and machine tools and the most approved processes and methods followed in engineering construction. The bench

work includes the following operations: plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenter's tools. The wood-turning involves the various principles of lathe work in wood, and is carried on from a set of blueprints issued by the department for that purpose. Pattern-making is taken only by students in Mechanical Engineering. The students from the School of Mines devote a portion of the time to the principles of mine-timbering. *Both semesters. 2–4:30, M. W. Two credits each semester.* Students of Agriculture will take one period for one semester, receiving one credit. 201 Mechanical Building. Assistant Professor Preston, Mr. Brown. Fee, $2 per semester.

2. FORGING. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case-hardening, and the making of a complete set of machine cutting tools for the student's future use in the machine shop. *Both semesters, section 1, 2–4:30, T. Th.; section 2, 8–12, Sat. Two credits each semester.* Students of Agriculture will take one period for one semester, receiving one credit. 101 Mechanical Building. Assistant Professor Preston, Mr. Brown. Fee, $2 per semester.

3. MACHINE WORK. Instruction in this work consists of vise work in iron, including surface-chipping, squaring, and fitting, round-filing, sawing, scraping, and polishing. Machine-work in metals, including exercises in straight and taper turning, slotting, drilling, boring, planing, and screw-cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work and the use of the lathe, shaper, milling-machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Both semesters, 2–4:30, T. Th. F.; 8–12, Sat. One to four credits each semester.* 101 Mechanical Building. Assistant Professor Preston. Fee, $2 per semester.

4. FOUNDRY PRACTICE. Instruction is given in molding, core-making, and casting in brass and iron. Practically all of the castings used in the machine shop are made by the students in this course. *Both semesters, 8–12, Sat. Two credits*

each semester. 101 Mechanical Building. Assistant Professor Preston. Fee, $2 per semester.

METEOROLOGY AND CLIMATOLOGY

PROFESSOR FERGUSSON

1. METEOROLOGY AND CLIMATOLOGY. Elements of Meteorology and Climatology, including methods of observation and reduction of observations; errors and exposure of instruments; practical uses of meteorological data, weather maps, forecasting; perodicity, climatology of the United States. Lectures and recitations. *Second semester. Hours and credits to be arranged.* Station Library. Professor Fergusson.

21. ADVANCED COURSE. Physics of atmosphere, aerology; laboratory work, including theory and testing of instruments, original experimental subjects. *Second semester. Hours and credits to be arranged.* Professor Fergusson.

MILITARY SCIENCE AND TACTICS

CAPTAIN APPLEWHITE

MILITARY 1. Practical instruction in squad, company, and battalion drills; ceremonies; bayonet exercise and combat; band practice; small-arms target practice, both gallery and range; guard duty. Required of all first-year male students. *Two semesters, 11–12, M. T. W. Th.* (*During December, January, and February, 11–12, W.*) *One credit.* Captain Applewhite.

MILITARY 2. Theoretical instruction; recitations in infantry drill regulations; small-arms firing regulations; manual of guard duty; lectures on the organization of the United States Army, our military history, and the value of military training to the individual and to the Nation. Required of all first-year male students. *11–12, M. T. Th. during December, January, and February. One credit.* Captain Applewhite and Cadet Officers.

MILITARY 3. Practical instruction as given in Course 1 continued; duties of noncommissioned officers; visual signaling; hasty intrenching; first aid to the injured; minor tactics maneuvers. Required of all second-year male students. *Two semesters. 11–12, M. T. W. Th.* (*During December, January, and February, 11–12 W.*) *One credit.* Captain Applewhite.

MILITARY 4. Recitations in field service regulations; minor tactics involving the use of the company and battalion of infantry; preparation of official papers. Required of all

second-year male students. *11–12, M.T.Th. during December, January, and February. One credit.* Captain Applewhite and Cadet Officers.

MILITARY 23. Theoretical instruction; map-reading and map-making; organization and tactics, including the theory and functions of the various arms, with solution of tactical problems; field engineering. Elective for all male students who have satisfactorily completed Courses 2 and 4. *Hours to be arranged. One credit each semester.* Captain Applewhite.

MILITARY 24. Theoretical instruction; duties of commissioned officers; map maneuvers; care of troops in the field; camp sanitation and hygiene; military policy of the United States. Elective for all male students who have satisfactorily completed Course 23. *Hours to be arranged. One credit each semester.* Captain Applewhite.

NOTE—All male students in the Junior and Senior years are required to continue Courses 1 and 3.

MINERALOGY

College of Engineering

PROFESSOR JONES

1. DETERMINATIVE MINERALOGY. The first few weeks are devoted to an elementary course in crystallography, followed by the determination of the more common minerals chiefly by means of their physical properties, using such simple tests as are of easy application in the field. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *First semester, 2–4:30, M. W. Two credits.* Mackay Mining Building. Professor Jones. Fee, $2.50.

2. DETERMINATIVE MINERALOGY. The determination of minerals by blowpipe analysis. *Prerequisite:* Chemistry 1, or an entrance credit in Chemistry. *Second semester, 2–4:30, M. W. Two credits.* Mackay Mining Building. Professor Jones. Fee, $2.50.

3. DESCRIPTIVE MINERALOGY. Lectures and recitations on the classification, salient properties, occurrence, genesis, and uses of the more important minerals, illustrated by typical specimens. *Prerequisite:* Mineralogy 1. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Jones.

21. OPTICAL PROPERTIES OF MINERALS. Lectures. *Prerequisites:* Mineralogy 1 and 2; Physics 2 and 3. *First*

semester, 1–2, M. T. Two credits. Mackay Mining Building. Professor Jones.

22. OPTICAL PROPERTIES OF MINERALS. Laboratory. Microscopic study and determination of the rock-forming minerals in thin sections, including the preparation of material for microscopic work. Mineralogy 21 should be taken concurrently. *First semester, 1–4, F. One credit.* Mackay Mining Building. Professor Jones. Deposit, $5.

MINING AND METALLURGY

College of Engineering

PROFESSOR LINCOLN
ASSISTANT PROFESSOR PALMER

21. MINING (General). Excavation, explosives, tunneling, boring, shaft-sinking. *First semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor Lincoln.

22. MINING (General). Lectures and recitations. Ore deposits, prospecting, development, exploitation, examination, mine equipment, and management. *Second semester. Hours to be arranged. Four credits.* Lecture Room, Mackay Mining Building. Professor Lincoln.

23a. MINING (Laboratory). Problems in engineering and in the design of mining and metallurgical machinery. *First semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor Lincoln.

23b. MINING (Laboratory). Continuation of Mining 23a. *Second semester. Hours to be arranged. Two credits.* Lecture Room, Mackay Mining Building. Professor Lincoln.

24. MINING (Laboratory). Practice in sharpening and tempering hand and machine drills, in the use of these, and in forging and welding. *First semester (alternate years). Hours to be arranged. Two credits.* Mining Laboratory and Forge Shop. Assistant Professor Palmer.

25. EXCURSIONS. During the year two trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term, and has for its object the study of an ore deposit. The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formation is also done in order to facilitate inter-

pretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide, and reduction plants. Reports of observations, with sketches, are required of each student. (For Seniors, School of Mines.) Professor Lincoln.

26. ENGINEERING CONTRACTS AND SPECIFICATIONS. *Second semester. Elective. Hour to be arranged. One credit.* Lecture Room, Mackay Mining Building. Professor Lincoln.

27. METALLURGY (General). Lectures and recitations. Physical properties of the more important metals and alloys; physical properties of the structural metals and alloy steels; the metallographical study of steels. *Prerequisites:* Chemistry 1, 2, 3; Mineralogy 1. *Both semesters. Two credits each semester.* Lecture Room, Mackay Mining Building. Assistant Professor Palmer.

28. METALLURGY (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *First semester, 10–11, M. T. Th. F. Four credits.* Lecture Room, Mackay Mining Building. Professor Lincoln.

29. METALLURGY (Copper, Lead, Zinc). Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management, and economic conditions. *Prerequisite:* Metallurgy 27. *Second semester, 10–11, M. T. Th. F. Four credits.* Lecture Room, Mackay Mining Building. Professor Lincoln.

30. METALLURGY (Laboratory). A series of experiments is given designed to supplement, in part, the classroom work, and to illustrate the more important methods of ore treatment. Complete ore tests on a working scale are used to supplement the small-scale experiments. *Prerequisites:* Metallurgy 27; Chemistry 5 and 6. *First semester, 2–4:30, W. Th. Second semester, 2–4:30, Th. F. Two credits each semester.* Metallurgical Laboratory, Mackay Mining Building. Assistant Professor Palmer. Fee, $10 per semester.

31a. ASSAYING. Lectures and recitations. Methods of assaying, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying. *Prerequisites:* Chemistry 1, 2, 3, 5, 6; Mineralogy

1. *First semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Assistant Professor Palmer.

31b. ASSAYING. Lectures and recitations. Chemistry in assay slags and slag calculation. Full discussion of the assay of difficult ores and metallurgical products, the fire assay of lead, platinum, bismuth, tin, and mercury, the errors and losses in fire assay. *Second semester. Hours to be arranged. One credit.* Lecture Room, Mackay Mining Building. Assistant Professor Palmer.

32. ASSAYING (Laboratory). Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miner's pan, horn, and batea. *Prerequisites:* Chemistry 1, 2, 3, 5, 6; Mineralogy 1. *First semester, one credit. Second semester, two credits. Hours to be arranged.* Assaying Laboratory, Mackay Mining Building. Assistant Professor Palmer. Fee, $5 for first semester; for second semester, $7.50.

33. FIRST AID AND HYGIENE. Four lectures. Required of all Seniors, School of Mines. *Second semester. Hours to be arranged.* Professor Frandsen.

34. MINING LAW. Four lectures. *Second semester. Hours to be arranged.*

35. SUMMER WORK IN MINING. Each mining student before graduation must present a report of some practical mining work in which he has been engaged. The work should cover at least one month's time. Students are advised to do this work in the Freshman or Sophomore vacations, and to put at least one whole vacation period into practical work.

36. MINING CONFERENCE. Discussion of laboratory and classroom work; technical literature, student papers, and quizzes. *Both semesters. Hour to be arranged. One credit each semester.* Mackay Mining Building. Professor Lincoln.

37. METALLURGICAL CALCULATIONS. A discussion of the principles of thermo-chemistry and a series of problems illustrating them. *Elective. Second semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Palmer.

39. MILL AND SMELTER ANALYTICAL METHODS. *Elective. First semester (alternate years). Hours to be arranged. Two credits.* Mackay Mining Building. Assistant Professor Palmer. Fee, $10.

40. THESIS. Each senior student is required to present a thesis on some subject in mining or metallurgy or related branch of Engineering. *Second semester. Hours to be arranged. Two credits.* Mackay Mining Building. Professor Lincoln, Assistant Professor Palmer.

MUSIC

MISS DENNY

The courses in Music may be taken in any year of College residence.

NOTE—The courses of the department are of two kinds: (*a*) A course in public-school music for those who intend to teach. (Music 1 and 2.) (*b*) Courses involving the study of music from historical, scientific, and interpretative viewpoints. (Music 3, 4, 5, and 6.)

1. ELEMENTS OF MUSIC (College of Education). Study of major and minor keys; study of intervals and chords; recognition of song elements through ear and eye; notation of familiar melodies; sight singing and ear training. *Both semesters, 3–4, M. W. One credit each semester.* Miss Denny.

2. METHODS (College of Education). Presentation and illustration through classwork of elementary and advanced musical problems in order; lectures on care and development of child voice; use of teacher's voice; short study of musical forms; interpretation of songs; music outlines for graded and ungraded schools; practice teaching in class. *Both semesters, 1–2, T. Th. One credit each semester.* Miss Denny.

3. HISTORY OF MUSIC. Lecture course with collateral readings. Evolution of music; rise of polyphony; development of the oratorio and opera; the Netherlands, Italian, Early English, and later Romantic Schools; music of the various nations; modern music; lives of composers. *Both semesters, 1–2, M. W. One credit each semester.* Miss Denny.

4. HARMONY. Review of major and minor scales; study of intervals and triads; connection and inversion of triads, primary and secondary; cadences complete and partial; sequences; chord of the dominant seventh and its inversions; secondary sevenths; simple diatonic modulations; harmonization of given basses and melodies. All inversions, chord progressions, and modulations made familiar to ear and eye by illustrations at the piano. *Both semesters, 2–3, T. Th. One credit each semester.* Miss Denny.

5. CHORUS SINGING AND INTERPRETATION. Selections from standard works and compositions suited to the musical needs of the group are studied and presented in public. Member-

ship is limited to women students of musical ability who have had sufficient practice in singing to pass entrance requirements. Examinations are given by special appointment. *Both semesters, 4:30–5:30, T. Th.* Miss Denny.

6. VOICE. This course consists of individual work in sections limited to four. The work embodies exercises for breath control and for voice placing; a study of time values and phrasing; a study of interpretative singing through German Lieder and modern songs of medium difficulty. This course is open only to regularly registered students. *Both semesters. One hour to be arranged. No credit.* Miss Denny.

PHYSICAL EDUCATION FOR WOMEN

MISS SAMETH

NOTE—The course in Physical Education is offered to all young women in the University and is required in the Freshman and Sophomore years as part of the regular work. Upon entering the class, students are carefully examined by a physician with particular attention to the lungs and heart action. Upon recommendation of a physician work in Physical Education may be postponed to the Junior and Senior years. At the beginning of the year physical measurements of all members of the Physical Education classes are taken. These measurements must be made on or before the last day set for registration. Students will do well to make their appointments for measurements between 9 and 12 a. m. of the first day of registration. The aim is to develop a strong, symmetrical physique, with an easy and graceful poise of the body. Systematic exercise in the gymnasium and out of doors makes it possible to obtain these results.

Women taking this course are required to provide themselves with regulation gymnasium suits and shoes. The suits will cost about $5.50 each. A deposit of 50 cents is required for locker keys. This will be refunded at the close of the year to those who return their keys.

1. FRESHMAN SECTION. Free work, light apparatus, games, folk, national and esthetic dancing. *Both semesters. 11–12, T. Th., 2–3, M. One credit each semester.* Gymnasium. Miss Sameth.

2. SOPHOMORE SECTION. Free work, including Swedish marching, apparatus, folk, national, and esthetic dancing. *Both semesters. 11–12, M. W., 3–4, Th. One credit each semester.* Gymnasium. Miss Sameth.

23. KINESIOLOGY. Elective work for Juniors and Seniors. *Prerequisites:* Physical Education 1 and 2, and Hygiene 1. The object of this course is to familiarize the student with the mechanism of the human body, dealing particularly with the shoulder, girdle, spine, pelvis, and feet, and the large muscles involved, so that the student will be prepared to study intelligently cases of round shoulders, spinal curvature, and flat feet. One recitation, one hour devoted to assisting with students taking Physical Education 25, and one period of gymnastics

per week for one semester. *Hours to be arranged. One credit.* Gymnasium. Miss Sameth.

24. CORRECTIVE GYMNASTICS. (Theory.) Elective for Juniors and Seniors. Physical Education 23 and 24 may be substituted by Seniors in Education for Physical Education 2. *Prerequisite:* Physical Education 23. This course is intended to be a practical application of Physical Education 23. The student will be given an opportunity to prescribe exercises for students taking Physical Education 25. One hour a week will be spent in the gymnasium at this work. In addition there will be one recitation and one gymnasium period per week for one semester. *Hours to be arranged. One credit. Bowen:* Mechanics of Bodily Exercise.

25. CORRECTIVE GYMNASTICS. (Practice.) Required instead of Physical Education 1 and 2 of all students who upon examination show a need of it. Six twenty-minute periods per week. *Hours to be arranged. One credit per semester.* Gymnasium. Miss Sameth.

26. MATERIAL COURSE. This class will meet once a week at hours to be arranged. An attendance of not less than twelve will be required for its continuance. The object is to give those who are going out to teach, simple games, folk dances, and setting-up drills suitable for use in the grades. In connection with this course, students will be required to teach a class of children for half an hour each week. Those who take this work will be required to take one additional physical education period in order to make up gymnasium credit, if they need it. *Both semesters. Hours and credits to be arranged.* Miss Sameth.

27. ATHLETICS. Two or four hours per week of athletics (skating, basket-ball, baseball, tennis, hockey, etc.) may be substituted for one or two hours of formal work or games.

PHYSICS

PROFESSOR HARTMAN

1. GENERAL PHYSICS. A course in General Physics giving University credit to students entering the University without condition, but with a deficiency in this subject. Lectures and recitations with experimental demonstrations and problem work. The laboratory work is largely quantitative in character and is designed to illustrate fundamental physical principles and to develop skill and accuracy in the methods of physical measurement. *Prerequisite:* Plane Geometry. A

knowledge of trigonometry also is desirable. *Both semesters. Lectures, 10–11, M. W. F. Laboratory, 2–4:30, F. Four credits each semester.* 5, 6, and 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

2. GENERAL PHYSICS. Mechanics and heat, sound and light, and electricity and magnetism. Lectures and recitations are fully illustrated by experimental demonstrations at the lecture table and by problems. *Prerequisites:* Mathematics 1 and 7; High-School Physics or Physics 1. *Both semesters. 9–10, daily. Five credits per semester.* 11 Physics Building. Professor Hartman.

3. PHYSICAL MEASUREMENTS. Experimental work of distinctly quantitative character is done in heat and mechanics, sound and light, and electricity and magnetism. The methods selected involve fundamental physical principles, and illustrate their most important application. *Prerequisites:* Mathematics 1 and 7; Physics 1. *Both semesters, 2–4:30, W. Th. Two credits each semester.* 5 and 6 Physics Building. Professor Hartman. Fee, $2 per semester; deposit, $5.

21. ELECTRICAL MEASUREMENTS. Precise measurements of current, electro-motive force, and power, with both alternating and direct current. Calibration of instruments, determination of resistance, capacity, mutual inductance, and self-inductance. Hysteresis. Photometry. One hour each week will be devoted to discussion and recitation. *Prerequisites:* Physics 1, 2, and 3. *First semester, 2–4:30, T. W. One or two credits.* 5 and 6 Physics Building. Professor Hartman. Fee, $2; deposit, $5.

22. HEAT AND THERMODYNAMICS. Lectures and recitations accompanied by experimental work of a quantitative character. This course, together with Physics 23, is introductory to Mathematical Physics. Many of the more difficult subjects merely touched upon in Physics 1 will be fully treated. *Prerequisites:* Physics 1, 2, 3, and Mathematics 7, 8, 9. *Both semesters, 8–9, T. Th. Two credits each semester.* 11 Physics Building. Professor Hartman.

23. LIGHT AND PHYSICAL OPTICS. Lectures with experimental illustration on selected topics in light, including discussion of wave theory, diffraction, interference, resolving power of optical instruments, dispersion and absorption, spectrum analysis, double refraction, and polarization. *Prerequisites:* Physics 2 and 3; Mathematics 7, 8, and 9. *Both*

semesters, 8–9, T. Th. Two credits each semester. 11 Physics Building. Professor Hartman.

24. PHYSICAL OPTICS. Laboratory exercises in connection with Course 23. *First semester, 2–4:30, M. W. Two credits.* 11 Physics Building. Professor Hartman. Fee, $1; deposit, $5.

25. HISTORY OF PHYSICS. Lectures and recitations. Preparation of reports and discussion of assigned topics by members of the class. *Prerequisites:* Physics 1, 2, and 3. *Both semesters, 10–11, Th. One credit.* 11 Physics Building. Professor Hartman.

26. DISCHARGE OF ELECTRICITY THROUGH GASES. *Prerequisite:* Physics 2. *First semester, 8–9, T. Th. Two credits.* 11 Physics Building. Professor Hartman.

27. ELECTRIC LIGHTING. The application of physical principles to the various problems of electric lighting, photometry, and miscellaneous applications of electricity. *Prerequisites:* Physics 1, 2, and 3, and Mathematics 7, 8, and 9. *First semester, 10–11, T. Th. Two credits.* 11 Physics Building. Professor Hartman.

28. MATHEMATICAL PHYSICS. An introduction for the more advanced mathematical analysis as applied to general physical problems. *Prerequisites:* Physics 1, 2, 3, 21, and 22, and Mathematics 7, 8, and 9, Differential Equations. *Both semesters, 2–3, Th. One credit each semester.* 11 Physics Building. Professor Hartman.

40. UNDERGRADUATE THESIS WORK, and all special laboratory work not included in the courses announced above. *Both semesters. Hours and credits to be arranged.* 11 Physics Building. Professor Hartman. Fee, $1 per semester; deposit, $5.

PSYCHOLOGY

PROFESSOR ORDAHL

1. GENERAL PSYCHOLOGY. This course deals with sensation, affection, perception, memory, imagination, habit, the higher mental processes, and the emotional life. *Prerequisite or parallel:* Hygiene 1, or Zoology 5. *First semester, 8–9, M. W. F. Three credits.* 101 Stewart Hall. Professor Ordahl.

3. EXPERIMENTAL PSYCHOLOGY. Lectures, readings, and laboratory work. A comparative study is made of the most recent experimental work on the genesis and function of consciousness in animal and human behavior. *Second semester. Lectures, 8–9, M. W. F. Laboratory, two one-hour periods per*

week, 1–2 or 2–3, T. Th. Three credits. 101 Stewart Hall. Professor Ordahl.

NOTE—Psychology 1 and 3 should be taken in the Sophomore year.

22. GENETIC AND SOCIAL PSYCHOLOGY. A study of human behavior through the various stages of civilization, with special reference to the analysis of the psychic factors underlying the evolution of typical moral, ethical, and esthetic ideals. *Prerequisites:* Psychology 1 and 2. *Both semesters. Hours to be arranged. Two credits each semester.* Professor Ordahl.

For other courses in Psychology, see Education 5 and 21.

SPANISH LANGUAGE AND LITERATURE

PROFESSOR DELAGUNA

The courses in Spanish are open to Freshmen and Sophomores.

21. BEGINNING SPANISH. The course in Spanish has been planned for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. As much time as can be spared from text-book work is devoted to Spanish conversation. *Prerequisites:* two years of Latin and two of French, or an equivalent. *Both semesters. Hours to be arranged. Two credits each semester.* 101 Stewart Hall. Professor deLaguna.

22. ADVANCED SPANISH. Modern Spanish novels, and plays by standard authors—Valera: Pepita Jiménez; Galdós: Marianela; Alarcón: Capitán Veneno; Echegaray: O Locura ó Santidad; Gil y Zárate: Guzmán el Bueno. *Prerequisite:* Spanish 21, or two years of high-school Spanish. *Both semesters. Hours to be arranged. Two credits each semester.* 101 Stewart Hall. Professor deLaguna.

23. CLASSICAL SPANISH. Reading. Lope de Vega: La Estrella de Sevilla; Calderon: El Mágico Prodigioso; Moreto: El Desdén con el Desdén; Cervantes: Selections from Don Quixote. *Prerequisites:* Spanish 21 and Spanish 22. *Both semesters. Two credits each semester.* (Not given in 1914–15.) 101 Stewart Hall. Professor deLaguna.

VETERINARY SCIENCE

College of Agriculture

PROFESSOR MACK

22. VETERINARY SCIENCE. A lecture course covering the more common ailments of domesticated animals, the maintenance of sanitary conditions, the methods of combating infection. This course is given in alternate years for Juniors and

Seniors. Given during 1914–15. *Prerequisites:* Zoology 1, Botany 1, and Hygiene 22. *Second semester. Hours to be arranged. Three credits.* 204 Hatch Hall. Professor Mack.

23. VETERINARY SCIENCE. Laboratory course. Practical exercises demonstrating anatomy, pathology, and medical and surgical clinics. Accompanies and amplifies Veterinary Science 22. *Prerequisites:* same as for Veterinary Science 22. *Second semester. Hours to be arranged. Two credits.* 204 Hatch Hall. Professor Mack, and assistants.

ZOOLOGY

PROFESSOR FRANDSEN
PROFESSOR DOTEN
MISS MACK

1. GENERAL ZOOLOGY. An introduction to the whole field of zoology. In the laboratory a number of animal types are studied, beginning with the simple and proceeding to the most highly organized. *First semester. Lectures, 8–9, T. Th. Laboratory, 2–4:40, M. W. Four credits.* 202 Hatch Hall. Professor Frandsen, Miss Mack. Fee, $1; deposit, $2.

2. COMPARATIVE ANATOMY AND PHYSIOLOGY OF VERTEBRATES. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. It is also intended for those who plan to teach zoology or human anatomy in the high school, and as a preparation for research work in anatomy. *Prerequisites:* Zoology 1 and Hygiene 1. *Both semesters, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits each semester.* (*Alternates with Courses 23 and 24.*) 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

5. NEUROLOGY. Lectures, demonstrations, and occasional laboratory exercise on the structure and physiology of the human nervous system. *Designed to give the necessary preparation for Psychology 1. First semester. Hours to be arranged.* 301 Hatch Hall. Professor Frandsen.

10. ECONOMIC ZOOLOGY (College of Agriculture). Lectures dealing with the habits and life histories of the more important economic vertebrates, insects, and other arthropods, worms, and protozoa in their relations to agriculture. One laboratory period per week. *Second semester. Three credits.* (*Given in alternate years to Juniors and Seniors in Agriculture.*) 301 Hatch

Hall, and field. Professor Frandsen, Professor Doten. Fee, $1; deposit, $2.

23. HISTOLOGY. The methods of killing, fixing, sectioning, staining, and mounting objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human, histology; but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisites:* Zoology 1 and 2; Hygiene 1. *First semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits.* 202 Hatch Hall. Professor Frandsen. Fee, $2; deposit, $2.

24. EMBRYOLOGY. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog, chick, and pig at successive stages of development. *Prerequisites:* Zoology, 1, 2, and 23; Hygiene 1. *Second semester, 10–11, M. W. F. Laboratory, 1–4:30, T. Th. Five credits.* 202 Hatch Hall. Professor Frandsen. Courses 23 and 24 alternate with Course 2. Fee, $2; deposit, $2.

28. EVOLUTION. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon science and life in general. *Second semester. Hours to be arranged. Two credits.* Professor Frandsen.

40. RESEARCH COURSE. Students electing Zoology as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects, selected from the different lines of zoological research, anatomy, physiology, histology, and embryology, will be submitted to the choice of the student. If desired, a student may elect thesis work in excess of the minimum one credit required. *Both semesters. Hours and credits to be arranged with individual student.* 202 Hatch Hall. Professor Frandsen. Fee, $2 per semester; deposit, $2.

ROSTER OF STUDENTS
September, 1913—March, 1914

RECIPIENTS OF SCHOLARSHIPS AND HONORS
1913

SCHOLARSHIP OF ONE HUNDRED DOLLARS FROM A FRIEND OF THE UNIVERSITY

At the request of the donor awarded to
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H. H. HOWE SCHOLARSHIP OF TWO HUNDRED DOLLARS

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Florence White ($30)
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Clara I. Smith ($20)

GOLD MEDAL

Awarded to that member of the graduating class who has maintained the highest average throughout the college course:

Eunice A. Cagwin

HONOR STUDENTS

Seniors

Eunice A. Cagwin
Mildred E. Donahue
Lena Hauss
Leola Lewis
Florence Evelyn White
Elizabeth M. Winter

Juniors

Edwina J. O'Brien
Clara I. Smith

Sophomores

Dorothy J. Bird
Veronica Dickey
Alson Shufelt
Tom P. Walker

Freshmen

Ruth Miller

GRADUATES

Diplomas and Degrees were awarded on Commencement Day, May 14, 1913, as follows:

MASTER OF ARTS

Charles Leroy Brown

BACHELOR OF ARTS, COLLEGE OF ARTS AND SCIENCE

Eunice Adelaide Cagwin
Lillian Adeline Davey
Marie Augusta De Flon
Mildred E. Donohue
Emma Elizabeth Frisch
Carolyn Elizabeth Hauss
Helen Brelsford Higgins
Bertha Rachel Jones
Leola Lewis
Lily Wilhelmina Smith
Lee Willoughby Stebbings
Florence Evelyn White
Edith Emelyn Winter
Elizabeth Marguerite Winter

BACHELOR OF SCIENCE, SCHOOL OF MINES

Arthur Icard Reynolds
Thomas McCourt Smither

BACHELOR OF SCIENCE, SCHOOL OF MECHANICAL ENGINEERING

Norman Lester Dorn
Frank C. Gignoux
Leonard Llewellyn Gilcrease

BACHELOR OF SCIENCE, SCHOOL OF CIVIL ENGINEERING

Morris Dudley Anderson
William Herman Settlemeyer

BACHELOR OF SCIENCE, SCHOOL OF AGRICULTURE

William Mortimer Charles
Eric Reay Mackay
Lloyd Brown Patrick
Joseph Willis Wilson

SENIOR COLLEGE DIPLOMA, COLLEGE OF EDUCATION

Eunice Adelaide Cagwin
Marie Augusta De Flon
Mildred E. Donohue
Carolyn Elizabeth Hauss
Helen Brelsford Higgins
Bertha Rachel Jones
Leola Lewis
Lily Wilhelmina Smith
Florence Evelyn White
Edith Emelyn Winter
Elizabeth Marguerite Winter

JUNIOR COLLEGE DIPLOMA, COLLEGE OF EDUCATION

Corinne Louise Christiansen
Edith Lorene Hubbard
Juanita Jones
Mary Wilder Lloyd
Alice Meffley
Gertrude May Pohl[1]
Emma Nevada Smith

[1] Diploma awarded December 18, 1912

ROSTER OF STUDENTS

GRADUATE

Boeke, Alma Marie	Arts and Science	Reno
Church, Mrs. Florence H.	Arts and Science	Reno
Dillon, Alice	Arts and Science	Reno
Elam, Anna S.	Arts and Science	Reno
MacNair, Georgia A.	Arts and Science	Reno
Powers, Mrs. G. D.	Arts and Science	Reno
Prouty, Estella A.	Arts and Science	Reno
Ross, Earl T.	Arts and Science	Reno
Sameth, Elsie	Arts and Science	Reno
Settlemeyer, William H.	Electrical Engineering	Gardnerville
Williams, Edwin E.	Arts and Science	Reno

SENIORS

Barber, Neil K.	Mech. and Elec. Eng.	Reno
Cazier, John I.	Agriculture	Wells
Cowgill, Philip S.	Civil Engineering	Reno
Cozzalio, Anne	Arts and Science	Truckee, Cal.
Dessar, Delwyn	Mech. and Elec. Eng.	New York City
Evans, Leslie	Agriculture	Reno
Farrer, Robert P.	Arts and Science	Reno
Frazer, Gladys E.	Arts and Science	Reno
Grayson, Harry W.	Arts and Science	Vallejo, Cal.
Hamilton, Claude P.	Mech. and Elec. Eng.	Silver City
Harriman, Lester P.	Agriculture	Northam
Hayes, Hazel L.	Arts and Science	Reno
Hilton, Charles R.	Arts and Science	Modesto, Cal.
Linsea, Carrie Edith	Arts and Science	Fallon
Lusk, Ward W.	Mech. and Elec. Eng.	Reno
McPhail, Harvey F.	Mech. and Elec. Eng.	Sparks
Mahan, Grace C.	Arts and Science	Reno
Menardi, John B., Jr.	Agriculture	Reno
Milentz, Carl A.	Agriculture	St. Louis, Mo.
O'Brien, Edwina J.	Arts and Science	Sparks
Raymond, Myrtle N.	Arts and Science	Reno
Smith, Clara I.	Arts and Science	Reno
Smyth, William I.	Mines	Reno
Van Leer, Alice R.	Arts and Science	Elko
Webster, William Clarke	Mech. and Elec. Eng.	Reno

Wilson, Nathaniel	Mech. and Elec. Eng.	Reno
Withers, Clerimond	Arts and Science	Reno
Wolfson, Henry	Arts and Science	New York City

JUNIORS

Abbott, Elmore S.	Mech. and Elec. Eng.	Modesto, Cal.
Akin, Routh	Arts and Science	Goldfield
Bacon, Chester A.	Mech. and Elec. Eng.	Reno
Banigan, Frank	Arts and Science	Reno
Barton, Horace	Mech. and Elec. Eng.	Reno
Bird, Dorothy J.	Arts and Science	Reno
Boggs, Arthur S.	Mech. and Elec. Eng.	Ludwig
Bowler, Walter H.	Mines	Tonopah
Brown, Ethel E.	Arts and Science	Reno
Coe, Gei	Agriculture	Fallon
Crotty, Marguerite E.	Arts and Science	Lovelock
Damm, Carna H.	Arts and Science	Lovelock
Dickey, Veronica	Arts and Science	Reno
Dondero, Nicholas	Mines	Olinghouse
Hancock, John Leslie	Mech. and Elec. Eng.	Gold Hill
Hazlett, Margaret E.	Arts and Science	Reno
Hussman, Ada	Arts and Science	Gardnerville
Hylton, Jessie G.	Arts and Science	Hylton
Kent, Ira L.	Agriculture	Fallon
Latapie, George A.	Mech. and Elec. Eng.	Reno
McCreery, George L.	Arts and Science	Carson City
McDonald, Joseph	Mech. and Elec. Eng.	San Mateo, Cal.
McKinlay, Peter G.	Mech. and Elec. Eng.	Garfield, Kans.
McQuiston, Harold T.	Civil Engineering	Chico, Cal.
Marzen, Laurena E.	Arts and Science	Truckee, Cal.
Mead, Marjorie	Arts and Science	Fallon
Neeld, Harper C.	Mines	Mercedes, Texas
Ogilvie, George F.	Agriculture	Lee
Ostroff, Robert A.	Arts and Science	Reno
Painter, Waterfield	Mines	Reno
Paterson, Chester A.	Mech. and Elec. Eng.	Reno
Pflaging, Adelbert	Arts and Science	Modesto, Cal.
Philippi, J. Fred.	Mines	Los Angeles, Cal.
Preston, Mrs. A. W.	Arts and Science	Reno
Price, Maude	Arts and Science	Reno
Rushby, Lysle	Arts and Science	Fallon
Shade, Gertrude A.	Arts and Science	Virginia City
Sheehy, Richard H.	Mech. and Elec. Eng.	Peterboro, Can.
Sinai, John S.	Agriculture	Stockton, Cal.

Smith, Frances	Arts and Science	Bodie, Cal.
Stinson, Pearl	Arts and Science	Reno
Swain, Earl H.	Mech. and Elec. Eng.	Goldfield
Trabert, Archie	Mech. and Elec. Eng.	Tonopah
Walker, Thomas P.	Mech. and Elec. Eng.	Reno
White, Leila L.	Arts and Science	Reno
Wiley, Elmer G.	Mech. and Elec. Eng.	Wadsworth
Williams, Josephine G.	Arts and Science	Reno

SOPHOMORES

Abel, David D.	Agriculture	Winnemucca
Bartholomew, Jean	Arts and Science	Modesto, Cal.
Beard, George K.	Arts and Science	Modesto, Cal.
Cafferata, Russell W.	Mech. and Elec. Eng.	Reno
Cazier, Edward C.	Agriculture	Wells
Colyer, Lydia	Education	Reno
Constable, James	Mech. and Elec. Eng.	Reno
Engle, Glenn	Civil Engineering	Auburn, Cal.
Engle, Vivian M.	Education	Auburn, Cal.
Enos, Joseph B.	Arts and Science	Oakland, Cal.
Faber, Edwin F.	Mines	Peoria, Ill.
Fake, Frank C.	Mech. and Elec. Eng.	Oakland, Cal.
Ferris, Lehman A.	Mech. and Elec. Eng.	Reno
Friberg, Neva	Education	Reno
Glass, Alton E.	Civil Engineering	Reno
Gould, Zoe	Education	Reno
Hamilton, Edith N.	Education	Reno
Healy, T. Bourke	Mines	Goldfield
Heffernan, Helen S.	Education	Goldfield
Herz, Elsie	Arts and Science	Reno
Herz, Emma	Arts and Science	Reno
Hinkley, Wilmer O.	Civil Engineering	Modesto, Cal.
Hobbins, Thomas	Mech. and Elec. Eng.	Reno
Hylton, Leland	Agriculture	Hylton
Jackson, Albert M.	Arts and Science	Brooklyn, N. Y.
Jepson, Walter	Arts and Science	Verdi
Johnson, Leslie E.	Agriculture	Wells
Krall, Edwin	Arts and Science	Reno
Layman, Oliver W.	Mech. and Elec. Eng.	Reno
Lemberger, John E.	Agriculture	Fort Bidwell, Cal.
Lemmon, Vera	Arts and Science	Reno
Leon, Mary M.	Arts and Science	Reno
McCubbin, Lloyd	Mech. and Elec. Eng.	Reno
McVicar, Grace M.	Education	Smith

Mack, Edith	Arts and Science	Reno
Miller, Ruth	Arts and Science	Reno
Murray, Ruth	Arts and Science	Reno
Pearson, Jack W.	Mech. and Elec. Eng.	Reno
Powers, Ina H.	Arts and Science	Virginia City
Powers, William M.	Agriculture	Los Angeles, Cal.
Price, A. Johnston	Arts and Science	Cedarville, Cal.
Quigley, John	Mines	Downieville, Cal.
Raitt, Mary	Arts and Science	Sparks
Rannells, Cordelia	Education	Reno
Reilly, Charles P.	Arts and Science	Merced, Cal.
Riley, Linford P.	Agriculture	Yerington
Root, Lloyd L.	Mines	San Francisco, Cal.
Rose, Louis A.	Mech. and Elec. Eng.	Modesto, Cal.
Rudawski, Beatrice	Arts and Science	Reno
Schoer, Christina	Education	Wells
Sielaff, Selma I.	Arts and Science	Reno
Somers, Louis J.	Arts and Science	Goldfield
Stouky, Harry V.	Arts and Science	Cromberg, Cal.
Stubbs, Ruth Gray	Arts and Science	Reno
Van Dalsem, Irving L.	Mines	Oroville, Cal.
White, H. Lawrence	Arts and Science	Los Angeles, Cal.
Withers, T. Lyster	Arts and Science	Reno
Woods, Ruth	Education	Silver Horn
Young, Georgiana	Arts and Science	Reno

FRESHMEN

Baglin, Irene H.	Education	Gold Hill
Baker, Laila M.	Arts and Science	Modesto, Cal.
Barker, Leah	Education	Reno
Baumbach, Eva C.	Education	Elko
Benton, Lois B.	Arts and Science	Reno
Bertschy, Ellen Isabel	Arts and Science	Reno
Brockway, Alvia, Jr.	Arts and Science	Modesto, Cal.
Brown, Gladys M.	Education	Reno
Bryant, S. Dean	Agriculture	Reno
Chism, Gardner L.	Agriculture	Reno
Constable, Agnes	Arts and Science	Reno
Cozzalio, Lina	Arts and Science	Truckee, Cal.
Craig, Barclay[1]	Mines	Dawson City, Alaska
Crowley, Basil W.	Arts and Science	Oakland, Cal.
De Hart, Bernice	Arts and Science	Reno
Drown, Ralph A.	Agriculture	Lee
Duddleson, Waldo J.	Arts and Science	East Ely

[1] Deceased.

Farrer, Elsie	Arts and Science	Reno
Fife, William	Arts and Science	Reno
Frey, Juanita	Arts and Science	Gardnerville
Gallagher, Lucille	Arts and Science	Yerington
Gooding, Charles C.	Arts and Science	Reese River
Hart, Henry H.	Civil Engineering	Modesto, Cal.
Hartung, Sybil	Arts and Science	Reno
Heard, John W.	Arts and Science	Santa Cruz, Cal.
Heidenreich, Frances R.	Education	Franktown
Heward, Elmer S.	Agriculture	Reno
Hinze, Ida	Arts and Science	Burlingame, Cal.
Hodgkinson, Francis W.	Agriculture	Reno
Hofer, Gladys	Arts and Science	Reno
Hood, Arthur J.	Arts and Science	Reno
Hopkins, Richard D.	Mines	Pomona, Cal.
Humphreys, Elsie L.	Arts and Science	Reno
Johnson, Olin	Mech. and Elec. Eng.	Cedarville, Cal.
Johnson, Thelma	Arts and Science	Sacramento, Cal.
Keating, Marie[1]	Arts and Science	Reno
Kemper, Carl D.	Mech. and Elec. Eng.	East Auburn, Cal.
Kemper, Margaret	Arts and Science	East Auburn, Cal.
King, Dana C.	Mines	Rawhide
Koster, Harry W.	Mines	Oakland, Cal.
Krummes, Simon	Arts and Science	Gardnerville
Luce, Harvey E.	Mech. and Elec. Eng.	Sheridan, Wyo.
MacIver, John L.	Mech. and Elec. Eng.	Reno
MacIver, Joseph K.	Mech. and Elec. Eng.	Reno
MacIver, Marguerite	Arts and Science	Reno
McKissick, Ruth	Arts and Science	Reno
McLaughlin, John H.	Agriculture	Goldfield
Mahan, Dorothy	Arts and Science	Reno
Masters, Charles F.	Mines	Roseville, Cal.
Morrison, Dorothy A.	Arts and Science	Reno
Morrow, Alma E.	Education	Yerington
Nelligan, Florence J.	Education	Bishop, Cal.
North, Edward G.	Mines	Los Angeles, Cal.
Organ, Vernon C.	Mech. and Elec. Eng.	Reno
Otto, Lucie	Arts and Science	Laws, Cal.
Pohl, Elrod	Mech. and Elec. Eng.	Reno
Pyle, Ruth A.	Arts and Science	Reno
Robinson, Warren C.	Mech. and Elec. Eng.	Cedarville, Cal.
Rulison, Claire	Education	Reno

[1] Deceased.

Ryder, Gladys	Education	Reno
Sather, Edwin S.	Civil Engineering	Auburn, Cal.
Schacht, Edna R.	Education	Yerington
Schmaling, Rosa	Education	Austin
Scott, Florence	Home Economics	Reno
Scott, Lee S.	Mech. and Elec. Eng.	Ely
Shade, Helena J.	Arts and Science	Virginia City
Sheerin, Ellen	Education	Virginia City
Sheldon, Zelda	Arts and Science	Reno
Squires, Herbert A.	Mines	Las Vegas
Stewart, John C.	Mech. and Elec. Eng.	Cedarville, Cal.
Taylor, Dorris	Arts and Science	Reno
Taylor, Edith	Arts and Science	East Oakland, Cal.
Tranter, Edwin F.	Arts and Science	Carson City
Volmer, William W.	Mines	San Francisco, Cal.
Walker, Eva A.	Arts and Science	Reno
Weck, Marion K.	Arts and Science	Reno
Williams, Alva	Education	Virginia City
Williams, Vivien R.	Education	Wonder
Wilson, Zenas D.[1]	Arts and Science	Nordyke
Wise, Walter H.	Mines	Bridgeport, Conn.
Wylie, Wilfrid L.	Arts and Science	Berkeley, Cal.

SPECIALS

Allen, Robert A.	Mech. and Elec. Eng.	Virginia City
Avery, Mrs. Harry	Arts and Science	Reno
Baker, Fay L.	Mech. and Elec. Eng.	Mina
Bartlett, Mrs. George	Home Economics	Reno
Becker, Aloysius	Home Economics	Reno
Beebe, Mrs. Arthur M.	Arts and Science	Reno
Belford, Mrs. Samuel	Arts and Science	Reno
Borchert, Earl	Mines	Cherry Creek
Claflin, Charles L.	Arts and Science	Bakersfield, Cal.
Clark, Arthur J.	Arts and Science	Laws, Cal.
Clegg, Charles F.	Mech. and Elec. Eng.	Reno
Clinton, George	Mines	Reno
Cole, Mrs. Harvey	Home Economics	Reno
Coon, Nann	Arts and Science	Reno
Cowgill, Marjorie	Arts and Science	Reno
Delahide, John J.	Mines	Jackson, Cal.
Dominguez, Joseph T.	Arts and Science	Durango, Mexico
Donlin, Brenetta	Arts and Science	Sparks
Dorsey, Mrs. C. D.	Arts and Science	Reno

[1] Deceased.

Elliott, Mrs. Amos W.	Arts and Science	Reno
Folsom, Frank B.	Mech. and Elec. Eng.	Reno
Forrest, Mrs. M. L.	Arts and Science	Reno
Frazee, Howard	Mech. and Elec. Eng.	Reno
Gilbert, Mrs. Jean	Arts and Science	Reno
Goodrich, Marjorie A.	Arts and Science	Reno
Hadley, Mrs. Irene	Arts and Science	Reno
Harvey, Ford	Mech. and Elec. Eng.	Reno
Hawcroft, Neva H.	Home Economics	Reno
Henderson, John K.	Arts and Science	Reno
Henningsen, George C.	Agriculture	Gardnerville
High, James D.	Agriculture	Modesto, Cal.
Hill, Mrs. A. E.	Home Economics	Reno
Hill, Mrs. H. W.	Arts and Science	Reno
Holloway, Otis L.	Mech. and Elec. Eng.	Reno
Hosking, Fred N.	Mines	Placerville, Cal.
Hovey, Harry H.	Agriculture	Wellington
Hussman, Otto L.	Civil Engineering	Gardnerville
Jacobson, Mrs. C. A.	Home Economics	Reno
Kincart, Gerald W.	Mech. and Elec. Eng.	Reno
King, Louis	Arts and Science	Reno
Koger, Marvin V.	Arts and Science	Rogersville, Tenn.
Laden, Helene	Arts and Science	Reno
LaTourette, Marguerite	Home Economics	Reno
McKenzie, Mrs. George	Arts and Science	Reno
McKinley, Mrs. Myrtle	Arts and Science	Reno
Malone, Wilson	Civil Engineering	Lafontaine, Kans.
Mason, Willard W.	Mech. and Elec. Eng.	Muskegon, Mich.
Meiss, Fountain J.	Mech. and Elec. Eng.	Reno
Melarkey, William E.	Mech. and Elec. Eng.	Reno
Mills, Curtis L.	Mech. and Elec. Eng.	Palo Alto, Cal.
Moore, Harry G.	Mines	Roseville, Cal.
Morrison, Mrs. Sidney	Home Economics	Reno
Neasham, J. Edward	Agriculture	Reno
North, Mrs. S. W.	Home Economics	Reno
Olds, Roscoe C.	Mines	Merced, Cal.
Ordahl, Mrs. George	Arts and Science	Reno
Parry, Lenora	Arts and Science	Reno
Pearson, Mrs. Walter	Arts and Science	Reno
Pierce, Robert M.	Mech. and Elec. Eng.	Fallon
Pinneo, Oscar	Mech. and Elec. Eng.	Susanville, Cal.
Pruett, Dale B.	Mech. and Elec. Eng.	Reno
Rand, Rachel	Arts and Science	Palisade
Raymond, Phillip E.	Mech. and Elec. Eng.	Reno

Richardson, Hazel D.	Home Economics	Reno
Rivett, Irving	Mech. and Elec. Eng.	Sacramento, Cal.
Schminke, Mrs. Gus	Home Economics	Reno
Shannon, Leo T.	Mech. and Elec. Eng.	Reno
Short, Charles M.	Agriculture	Reno
Siebert, Mrs. Fred	Home Economics	Reno
Smith, Mrs. George	Arts and Science	Reno
Snead, Fletcher W.	Mines	Reno
Steinmetz, Dorothy	Arts and Science	Reno
Stickney, William H.	Mines	New York City
Taylor, Jessie H.	Arts and Science	Reno
Vogt, Louis S.	Agriculture	San Diego, Cal.
Wagner, Mrs. Mertrude H.	Home Economics	Reno
Watson, Wayne A.	Mech. and Elec. Eng.	Reno
Whitmore, John E.	Mech. and Elec. Eng.	Palisade
Williams, Mrs. E. L.	Home Economics	Reno
Williams, Merrill B.	Agriculture	Reno
Young, W. Bassett	Mech. and Elec. Eng.	Reno

SUMMER SCHOOL

University of Nevada, 1913

Berry, Cora D.	New Pine Creek, Oreg.
Bird, Dorothy	Reno
Bowler, Emma I.	Tonopah
Byrne, Bertha	Elko
Cahill, Annie	Round Mountain
Chase, Sarah	Reno
Corliss, Geo. H.	Reno
Cowles, Gertrude	Carson City
Crotty, Marguerite	Lovelock
Damm, Georgia	Lovelock
Debell, Catherine	Reno
Dieringer, Retta	Austin
Ferrin, Mabel	Metropolis
Fischer, Ida	Manhattan
Franklin, Eula	Hamburg, Ark.
Ginocchio, Albina	Reno
Hackward, Ella	Bullion
Hetschel, Mary	Downey, Cal.
Hobbins, Helen	Reno
Jameson, Mrs. Scott	Reno
Jordan, Annie	Swift, Texas
McAbee, Eva A.	Metropolis
McEllin, Margaret	Ely

McKeown, E. L. Fallon
Mack, Effie M. Reno
Maxwell, Alice H. Reno
Merialdo, Isabel Eureka
O'Connell, Margaret Nevada City, Cal.
O'Connell, Agnes Nevada City, Cal.
Ordahl, Mrs. George Reno
Preston, Mrs. A. W. Reno
Rannells, Katherine Reno
Richardson, Mrs. Nellie Reno
Rising, Isabel Reno
Rudawski, Austril Reno
Rulison, Alpha Carson City
Shartel, Mrs. Ella Cedarville, Cal.
Stevens, Emma Lovelock
Tailleur, Gertrude Dayton
Toney, Minnie Lake City, Cal.
Trimble, May Cedarville, Cal.
Wasson, Mrs. Cornelia Reno
Welshons, Mrs. Lila Lamoille
White, Harriet Reno
Wilcox, Georgia Constantia, Cal.
Williams, Murrill B. Reno
Young, Juanita Lovelock

DAIRY SHORT COURSE

Adams, O. W. Reno
Hansen, Chris Reno
Hansen, Emil Reno
Herring, F. G. Reno
Hickey, William J. Reno
Martin, Andrew Reno
Sheldon, Roy Reno

SUMMARY

College of Arts and Science

Seniors	14	
Juniors	23	
Sophomores	25	
Freshmen	39	
Graduate	10	
Specials	29	
		140

College of Engineering

Mackay School of Mines—

Seniors	1	
Juniors	5	
Sophomores	5	
Freshmen	9	
Specials	8	
		28

School of Mechanical and Electrical Engineering—

Seniors	7	
Juniors	14	
Sophomores	9	
Freshmen	9	
Graduate	1	
Specials	21	
		61

School of Civil Engineering—

Seniors	1	
Juniors	1	
Sophomores	3	
Freshmen	3	
Specials	2	
		10

College of Agriculture and Home Economics

School of Agriculture—

Seniors	5	
Juniors	4	
Sophomores	7	
Freshmen	6	
Specials	7	
		29

School of Home Economics—

Freshmen	1	
Specials	14	
		15

College of Education

Seniors	0	
Juniors	0	
Sophomores	10	
Freshmen	14	
		24

Total University Schools	307
Enrollment of men	166
Enrollment of women	141
Total Summer School for Teachers	47
Total Dairy Short Course	7

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